



MONTANA FISH, WILDLIFE & PARKS

MADISON RIVER

RECREATION MANAGEMENT - ENVIRONMENTAL ASSESSMENT



June 12, 2020

Montana Fish, Wildlife & Parks

Attention: Madison River EA Comments

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Executive Summary

This Environment Assessment (EA) addresses recreation management on the Madison River from the outlet of Quake Lake downstream to its confluence with the Jefferson River. It was developed after extensive input from the public, Fish and Wildlife Commission and a Negotiated Rule Making Committee. The goal of this EA is to consider a variety of alternatives in order ***to manage recreation use of the Madison River in a manner that: 1) ensures long-term health and sustainability of the fisheries; 2) diversifies angling opportunity while reducing conflicts; and 3) sustains the ecological and economic benefits of the river to Montanans and our guests***. The management alternatives being considered are:

1.0: Non-regulatory alternative. This proposal would remove the existing walk/wade sections on the upper Madison River and the existing requirements for the Special Recreation Permit for commercial outfitters. It would not institute any new regulations on recreational use of the river other than those specific to fishing regulations. After analysis, it is considered that this alternative would not meet the goals as established and could be detrimental to the long-term health and sustainability of the fishery and would not diversify angling opportunity while reducing conflict.

2.0: Status quo alternative (no action alternative). The existing walk/wade sections on the upper Madison would be retained, as would the SRP permit system for commercial outfitters. It would not institute any new regulations for recreational use other than those specific to fishing regulations. Similar to alternative 1.0, analysis indicates that this alternative could cause impacts to the long-term health and sustainability of the fishery, and would therefore not be a good fit to achieve the required goals for recreation management on the Madison River.

3.0: Social conflict management alternative. This proposal would utilize different approaches to improve river user satisfaction and reduce crowding and conflict. Walk/wade sections would be changed to prohibit fishing from boats, rest/rotation sections would be instituted to provide space between commercial and non-commercial users, and access sites would be staffed or redesigned to reduce congestion. Access site acquisition and development below Greycliff FAS would be prohibited to ensure a more primitive experience is maintained. This alternative primarily addresses the goal of diversifying opportunity while minimizing conflicts.

4.0: User growth limitations alternative. This proposal would cap the number of commercial outfitter client trips using one of four allocation methods to assign trips to individual outfitters. It would also consider approaches to limit certain use by non-commercial recreationists. There are a variety of options within this alternative, including varying levels of caps and methods for allocation. It additionally contemplates options for addressing non-commercial activity on the river. Based on the options within this alternative it may have negative impacts or only partially achieve the goal for recreation management on the river.

5.0: Madison River recreation goal alternative. This alternative includes a combination of tools that are considered to best meet the objective stated in the Madison River goal. This proposal would change existing walk/wade sections to prohibit fishing from boats, two rest/rotation sections would be instituted to separate commercial and non-commercial users,



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access sites would be staffed and redesigned to reduce congestion, access site development below Greycliff FAS would be restricted to ensure a more primitive experience, commercial outfitter numbers would be capped at 2019 levels, and a no-cost “stamp” would be required of all users to assess impacts of non-commercial recreation. Based on the analysis, the tools within this alternative would ensure the long-term sustainability of the fishery, provide for a diversity of angling opportunity and would sustain the ecologic and economic benefits of the river.

Public comment is requested on the alternatives detailed in the subsequent sections. Public comment will open on XXXXXX and end on XXXXXX; details for the public comment process will be available at fwp.mt.gov. Public meetings will be held for the communities of Ennis, West Yellowstone, Butte and Bozeman. At the conclusion of the public comment period FWP will weigh and balance public input to develop a Management Plan and River Recreation Rule for presentation to the Fish and Wildlife Commission. If the Commission approves the draft rule notice, there will be an additional public comment period for the specific rule. Ideally, the river recreation rule will be implemented in 2021.



MONTANA FISH, WILDLIFE & PARKS

Table of Contents

I. Purpose of and Need for Action	
II. Madison River Use and Public Scoping.....	
III. Management Alternatives.....	
1.0: Non-regulatory alternative.....	
1.1: Remove existing walk/wade sections.....	
1.2: No commercial allocation system.....	
1.3: No rest-rotation sections.....	
1.4: No non-commercial allocation system evaluation.....	
1.5: No restrictions on commercial use or site development in lower river.....	
1.6: Remove existing requirements for the Special Recreation Permit (SRP).....	
2.0: Status quo alternative (no action alternative).....	
2.1: No modification to existing walk/wade sections.....	
2.2: No commercial allocation system.....	
2.3: No rest-rotation sections.....	
2.4: No non-commercial allocation system evaluation.....	
2.5: No restrictions on commercial use or site development in lower river.....	
2.6: Maintains existing Special Recreation Permit (SRP).....	
3.0: Social conflict management alternative.....	
3.1: Social conflict management: walk/wade sections.....	
3.1.1: Seasonal walk/wade, June 15 to September 30.....	
3.1.2: Seasonal walk/wade, June 15 to September 30 with time of day restriction.....	
3.2: Social conflict management: rest-rotation.....	
3.2.1: Two days rest-rotation seasonally June 15 to September 30.....	
Quake Lake to Lyons; Burnt Tree to Ennis	
3.2.2: Two days rest-rotation seasonally June 15 to September 30.....	
Varney to Ennis; Lyons Bridge to Palisades	
3.2.3: Six days rest-rotation year-round.....	
Quake Lake to Lyons; Lyons to Palisades; Palisades to McAtee; McAtee to Varney; Varney to Ennis; Ennis to Ennis Reservoir	
3.3: Social conflict management: access site management.....	
3.3.1: FAS Rangers.....	
3.3.2: Access site education.....	
3.3.3: Facility improvements.....	
3.4: Social conflict management: restrict commercial fishing below Greycliff FAS	
3.5: Social conflict management: primitive designation below Greycliff FAS.....	
3.5.1: No new access acquisitions in primitive section between Greycliff FAS and Milwaukee FAS.....	
3.5.2: Limited development in primitive section.....	
4.0: User growth limitations alternative.....	
4.1: Commercial caps: cap the total number of outfitter trips.....	
4.1.1: Cap the total number of outfitter trips at 2020 limits.....	



MONTANA FISH, WILDLIFE & PARKS

4.1.2: Cap the total number of outfitter trips at 2019 limits.....	
4.1.3: Cap the total number of outfitter trips at 2018 limits.....	
4.2: Commercial trip assignment	
4.2.1: Client-driven allocation method.....	
4.2.2: Historic-use allocation method.....	
4.2.3: Plan identified by current SRP holders.....	
4.2.4: Unlimited-use allocation method.....	
4.3: Non-commercial caps.....	
4.3.1: No-cost no-limit Madison River stamp.....	
4.3.2: Evaluation of lower river conflict.....	
5.0: Madison River goal alternative (preferred alternative).....	
Adaptive management of Madison River recreation management actions.....	
IV. Analysis of Alternatives.....	
Predicted effects on recreation value.....	
1.0: Non-regulatory alternative – analysis on recreation value.....	
2.0: Status quo alternative – analysis on recreation value.....	
3.0: Social conflict management – analysis on recreation value.....	
4.0: User growth limitations – analysis on recreation value.....	
5.0: Madison River goal alternative – analysis on recreation value.....	
Predicted effects on the physical environment and natural resources.....	
1.0: Non-regulatory alternative – analysis on physical and natural resources.....	
2.0: Status quo alternative – analysis on physical and natural resources.....	
3.0: Social conflict management – analysis on physical and natural resources.....	
4.0: User growth limitations – analysis on physical and natural resources.....	
5.0: Madison River goal alternative – analysis on physical and natural resources.....	
Predicted effects on heritage resources.....	
1.0: Non-regulatory alternative – analysis on heritage resources.....	
2.0: Status quo alternative – analysis on heritage resources.....	
3.0: Social conflict management – analysis on heritage resources.....	
4.0: User growth limitations – analysis on heritage resources.....	
5.0: Madison River goal alternative – analysis on heritage resources.....	
Predicted effects on economic resource values.....	
1.0: Non-regulatory alternative – analysis on economic resources.....	
2.0: Status quo alternative – analysis on economic resources.....	
3.0: Social conflict management – analysis on economic resources.....	
4.0: User growth limitations – analysis on economic resources.....	
5.0: Madison River goal alternative – analysis on economic resources.....	
Cumulative impacts and potential risks or hazardous adverse effects.....	
Appendix A: Landownership.....	



MONTANA FISH, WILDLIFE & PARKS

MADISON RIVER DRAFT RECREATION MANAGEMENT ENVIRONMENTAL ASSESSMENT

I. Purpose of and Need for Action

This Environmental Assessment (EA) addresses recreation management on the Madison River from the outlet of Quake Lake downstream to its confluence with the Jefferson River near the town of Three Forks, Montana. This EA considers multiple options for addressing the quality of the recreational experience on the Madison River. This EA excludes the Bear Trap Wilderness Area, which is managed exclusively by the Bureau of Land Management (BLM; Figure 1). Landownership is addressed in Appendix A.

Authority

- The Fish and Wildlife Commission has statutory authority to manage recreational use of publicly accessible waters in Montana (MCA 87-1-303).
- The Montana Environmental Policy Act, Title 75, Chapter 1.

Madison River History of Recreation Management

The Madison River is an iconic fishing destination for trout anglers worldwide. The popularity of this fishery is documented through FWP estimates on angling pressure, which indicate that the Madison River is one of the most heavily fished rivers in Montana. The current global pandemic caused by the novel coronavirus and its travel restrictions has thus far resulted in a reduction in 2020 non-resident fishing on the Madison River, but we do not foresee a permanent change in the popularity of the Madison River. The outfitting industry on the Madison has seen significant impacts, including work restrictions and trip cancellations. While we are likely to see a temporary change in use levels during 2020, it is expected that recent use patterns will resume when travel restrictions are relaxed. Accordingly, this Environment Assessment analyzes impacts from different management alternatives exclusive of any influence of the coronavirus.

Because of the heavy use on the river, there have been many efforts over the past several decades to address angler conflicts and crowding on the River:

- 1959: Float fishing closure from Hebgen Dam to Varney Bridge.
- 1967: Float fishing closure rotated between two reaches of the river each year.
- 1975/1976: Snoball and Pine Butte reaches closed to angling and harvest, respectively, for mortality study.
- 1980: 1-year moratorium on new outfitters.



MONTANA FISH, WILDLIFE & PARKS

- 1988 to present: Fishing from a vessel only allowed from Lyon's Bridge to Ennis Bridge on the upper Madison River.
- 2006: FWP and partners met with landowners concerned with Madison River recreation conflict.
- 2007: FWP and the BLM entered into agreement to implement Madison River Special Recreation Permits (SRP).
- 2008: FWP conducted survey of resident anglers concerning the Madison River.
- 2008: FWP surveyed Madison River Valley property owners about river recreation concerns.
- 2009: FWP conducted Madison River on-site visitor survey.
- 2011: FWP began formal process of Madison River recreation management planning.
- 2012: FWP initiated scoping process, including four public meetings and online survey.
- 2012: Madison Citizen Advisory Committee (MCAC) formed.
- 2013: MCAC recommendations presented to FWP Commission and distributed for public comment.
- 2014: FWP halted Madison River recreation management planning process because of agency-wide funding concerns.
- 2016: FWP reinitiated public engagement in the management planning process through three listening sessions and a mail-in survey of Upper Madison River anglers.
- 2017: FWP initiated a year-long on-site angler survey.
- 2018: FWP presented a draft Environmental Assessment and draft Madison River Recreation Management Plan and proposed administrative rules to the Fish and Wildlife Commission. The Fish and Wildlife Commission decided against release of the documents for public comment and instead asked FWP to come back with a proposal for a different process that would engage a broader range of constituents.
- 2018/19: FWP was directed by the Fish and Wildlife Commission to use a Negotiated Rulemaking Committee (NRC) to develop recreation rules for the Madison.
- 2019: The Madison NRC failed to reach consensus. Individual Committee Members submitted recommendations to the Fish and Wildlife Commission.
- 2019: The Fish and Wildlife Commission received 3 petitions for rulemaking on the Madison specifically for river recreation. The Commission did not adopt any of the petitions and instead directed FWP to conduct public scoping in order to narrow down options for consideration in a recreation management rule.
- 2019/20: FWP conducted an extensive public scoping process to identify alternatives for a recreation management rule. The survey was conducted online, in addition to FWP seeking input via email and regular mail. Over 8,000 responses were received.
- Current, June 2020: FWP presents a draft Environmental Assessment to the Fish and Wildlife Commission.



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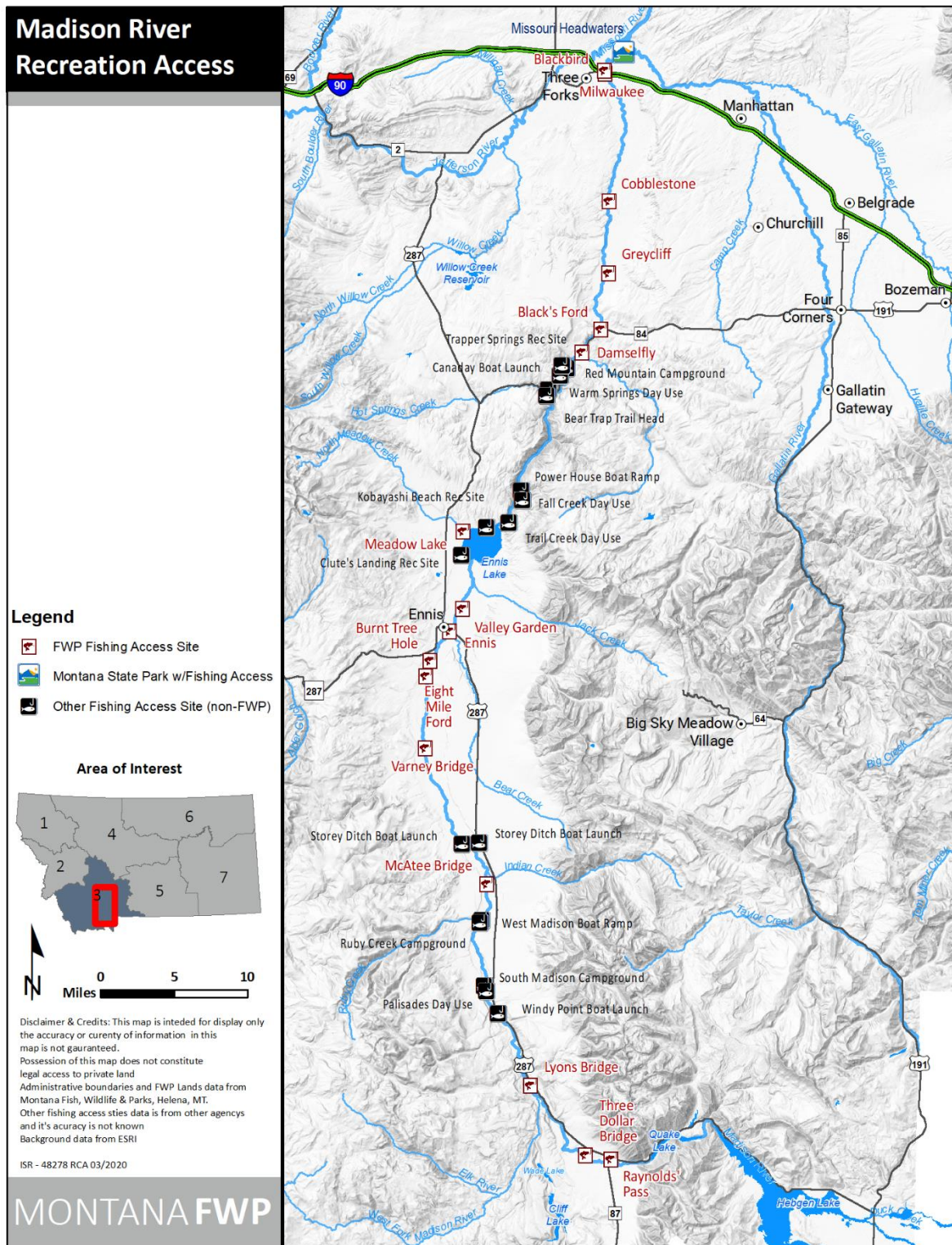


Figure 1. Map of the Madison River planning area.



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II. Madison River Use and Public Scoping

Madison River angler use data have been collected since the late 1970's. FWP also started surveying anglers on odd-numbered years in 1989 to estimate statewide use of all waters in Montana. For the upper Madison River (Hebgen Dam to Ennis Dam), angler use has increased consistently over time, (Figure 2), likely due to a combination of an increasing population, a productive fishery, and a general increase in the popularity of river recreation. Beginning in 2003, large increases in angling pressure have been observed on the upper Madison River. From 2003 to 2017, angling pressure has more than doubled from 91,000 to 207,000 angler days by a rate of 15% biennially. From 1982 to 2017, total angler pressure from non-resident anglers has remained stable at approximately 75% of users (Standard Deviation = 0.05). Though no obvious trends in the proportion of non-resident to resident angler days exist, the total number of out of state angler days has substantially increased.

Angler use on the lower Madison River (Ennis Dam to the Jefferson River) has shown a similar pattern to the upper river—slow growth from 1982 to 2011 and rapid growth from 2011 to 2017 (Figure 3). The main difference between these two sections of river is absolute numbers and in 2017 the upper river received more than three times the angler pressure than the lower river (207,000 vs 61,635 angler days)

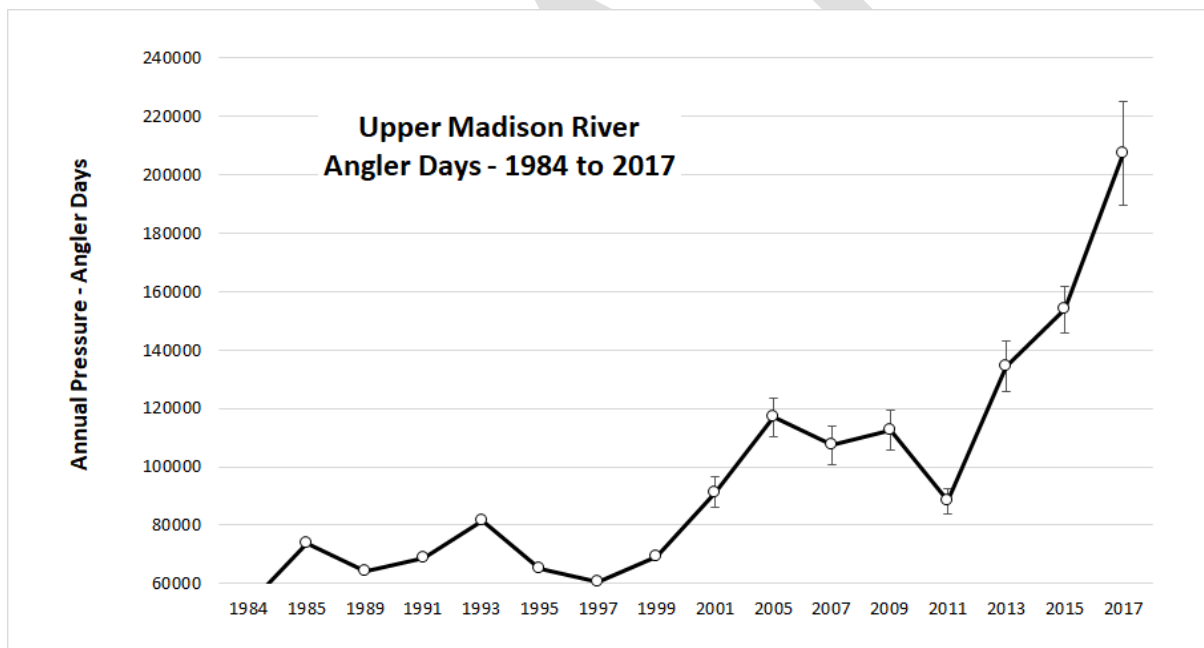


Figure 2. Angler days calculated from mail-in surveys collected on odd years. Vertical bars represent standard error/confidence intervals. One angler day is defined as an individual angler fishing for any amount of time on a discrete day.



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Lower Madison River Angler Pressure

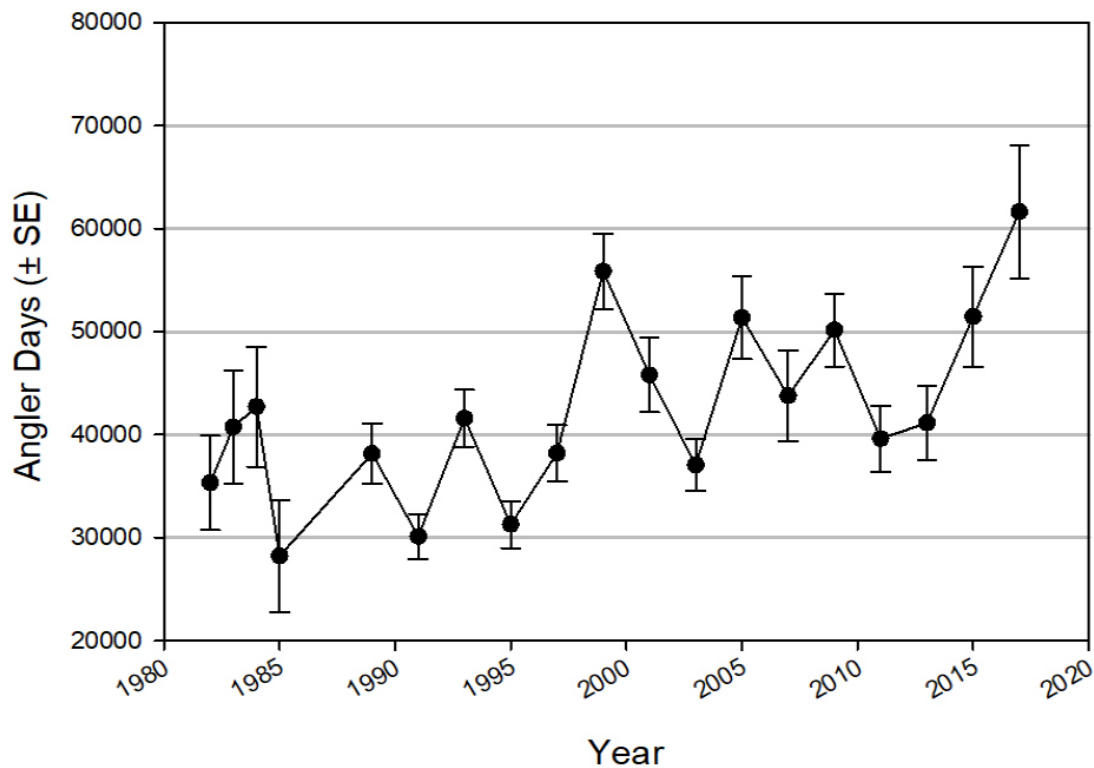


Figure 3. Angler days on the lower Madison River (section 1, Ennis Dam to mouth) from mail-in surveys collected 1982-1985 and thereafter on odd years, 1989-2017.

Trends in overall recreational use on the river have been monitored since 2005 by Northwestern Energy (Pinnacle Research 2018, 2020), through the use of traffic counters for the 16 primary public access sites on the upper Madison River and 13 primary public access sites on the lower Madison River. Not all sites are measured every year, but in some years since 2014 reliable estimates have been made for all these sites on both the upper and lower river. It was estimated that there were between 203,000 and 243,000 individual visits in the upper river during the summer (Friday before Memorial Day to Thursday after Labor Day) for the years 2014, 2017, and 2018. By comparison, there were between 290,000 and 318,000 visits on the lower river for the years 2016-2019 (Table 1).

Table 1. Number of unique visitors to access sites on the upper and lower Madison River 2014-2018.

Year	Lower Madison	Upper Madison
2014		203,387
2016	290,475	
2017	317,773	243,589
2018	314,908	245,575
2019	302,713	



MONTANA FISH, WILDLIFE & PARKS

Northwestern Energy also has traffic counters at seven “indicator” sites which have been monitored every year since 2007 on the upper river and four on the lower river. Changes at these sites give some idea of the trends in total recreational use on the river. On average, the upper river indicator sites have shown an annual increase in visitors of 2.3% since 2007, while the lower river has experienced a 2.0% annual increase.

For planning and management purposes, it is necessary to understand the relative contribution of anglers to overall use on the river in these two sections. Comparing these estimates of numbers of visitors (derived from traffic counters) to angler-days (derived from mail-in surveys) is difficult, because it is not known if one angler day is equivalent to one unique visitor. Nonetheless, the ratio of the two in 2017 was 2.0 for the upper river, versus 14.8 for the lower river, providing a clear indication that the influence of anglers on overall use of the upper river is much greater than in the lower river (Table 2). The implication of this is that solutions for crowding/conflict management on the lower river will primarily involve regulating the non-angling recreationists.

Table 2. Comparison of number of visitors to recreational sites on the Madison River and angler-days in peak recreational season in 2017 (Friday before Memorial Day to Thursday after Labor Day).			
Area	Visitors	Angler-days	Visitor: Angler day ratio
Upper Madison	243,589	119,943	2.0
Lower Madison	317,773	21,536	14.8

In 2007, the Bureau of Land Management (BLM) and FWP implemented a cooperative Special Recreation Permit Program (SRP) for administering commercial, competitive, and organized group activities on public lands and related waters within the Madison River corridor. Since the inception of the permit program on the Madison River, FWP has issued 352 Madison Special Recreation Permits to individual commercial operations. Permits issued to fishing outfitters have numbered 338, while 14 have been issued to shuttle services or scenic floats. Permitted fishing outfitters active on the Madison in 2019 numbered 222, the highest under the program.

A stipulation of the SRP program is that all outfitters must report annually to FWP all commercial use on the Madison River. According to recent reports, Madison River trips reported by commercial outfitters has more than doubled since 2008 (Table 3). Use of the upper Madison River (Quake Lake to Ennis FAS) by outfitters occurs predominantly from June through September (Figure 4). Outfitter use on the lower Madison River (Ennis Dam to the confluence with the Jefferson River), occurs primarily in the spring and fall because of warm summer water temperatures in this reach (Figure 5). With respect to specific access points, outfitters most frequently used the Lyons Bridge FAS as a launch point in 2018 on the upper river, followed by



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Varney Bridge FAS. Most frequently used sites as a take out were Varney Bridge FAS followed by Palisades Day Use Area (managed by BLM; Table 4). On the lower river, Warm Springs Day Use Area (managed by BLM) was the most frequently used put-in, followed by Canaday/Red Mountain Boat Launch (managed by BLM). Most frequently used take-outs were Greycliff FAS followed by Blacks Ford FAS. In 2016, FWP implemented season-long fishing on the entire upper Madison River in an effort to provide an uncrowded opportunity for anglers and distribute use during the spring. The newly liberalized regulations have lead to increases in spring outfitter use in previously closed sections of the upper Madison River.

Table 3. Reported commercial trips by year and month from 2008 to 2019. Trips may have one or more clients.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jan	0	1	1	0	0	3	4	9	4	3	5	5
Feb	1	1	1	3	0	3	2	15	21	4	6	3
Mar	3	15	21	25	27	24	26	92	63	121	137	83
Apr	86	133	100	69	118	82	159	184	296	329	437	432
May	229	151	167	173	205	276	347	523	437	622	472	621
Jun	1092	786	696	314	915	940	1368	1560	1834	2456	2427	2265
July	2536	2026	1811	2241	1927	2172	2588	2802	2883	2984	3396	3807
Aug	1624	1497	1326	1499	1861	1870	1869	2207	2754	2010	2405	3339
Sep	809	1256	996	1079	1374	1379	1497	1816	2132	1993	2152	2510
Oct	262	259	213	317	454	411	440	636	687	669	732	786
Nov	11	6	5	3	7	0	14	20	29	21	25	49
Dec	0	0	1	1	0	0	6	8	8	12	16	9
Total	6653	6131	5338	5724	6888	7160	8320	9872	11148	11224	12210	13909
% Change	n/a	-7.8	-12.9	7.2	20.3	3.9	16.2	18.7	12.9	0.7	8.8	13.9

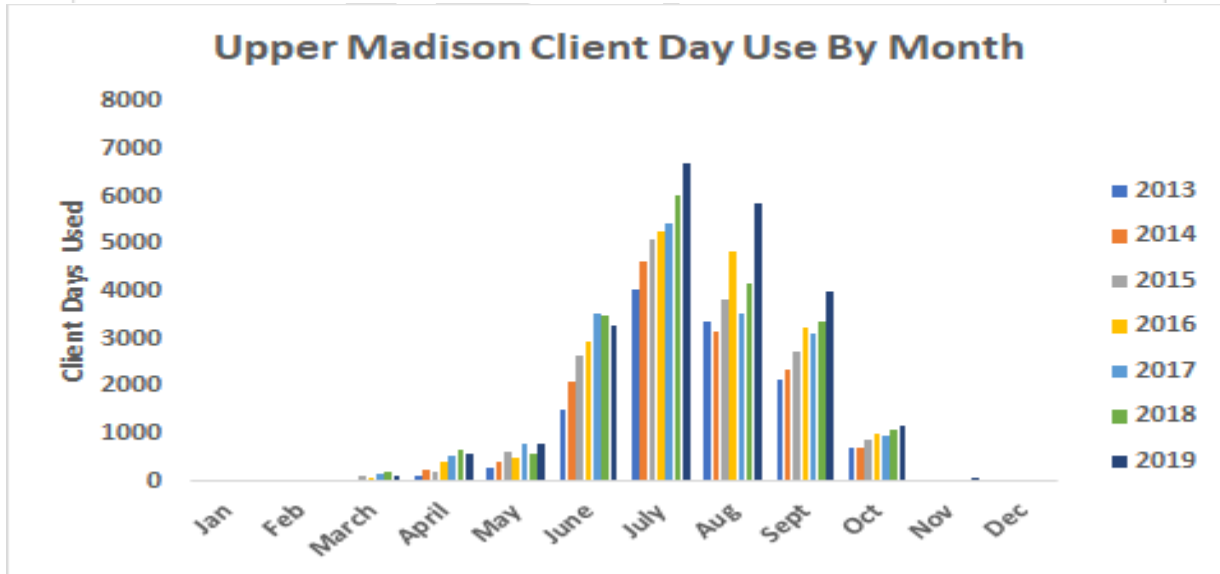


Figure 4. Commercial use of upper Madison River client days reported from 2013 to 2019.



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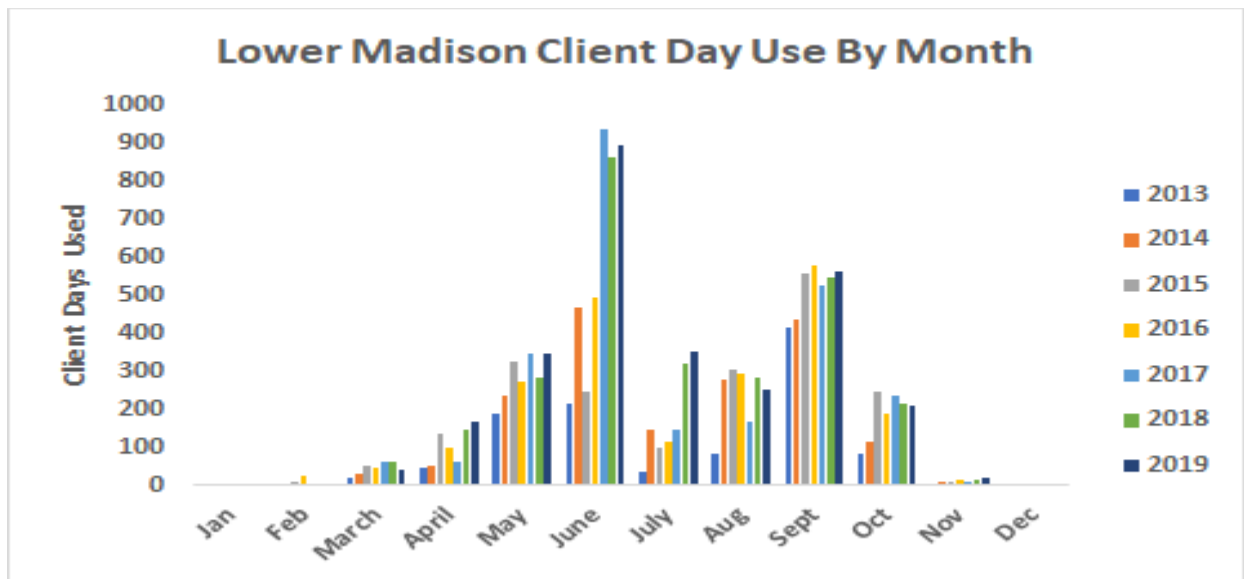


Figure 5. Commercial Use of lower Madison River client days reported from 2013 to 2019.

SRP outfitter reports show an increasing amount of outfitter use in the two wade-only reaches of the upper Madison: from Quake Lake to Lyons Bridge FAS and from Ennis FAS to Ennis Reservoir (Figure 6). Fishing from a vessel or float tube is prohibited in these reaches; however, it is legal to use a vessel or float tube to gain access for fishing. The reach from Quake Lake to Lyons Bridge FAS has nearly doubled in outfitter use since 2013 while the reach from Ennis FAS to Ennis Reservoir has increased by over 350%.

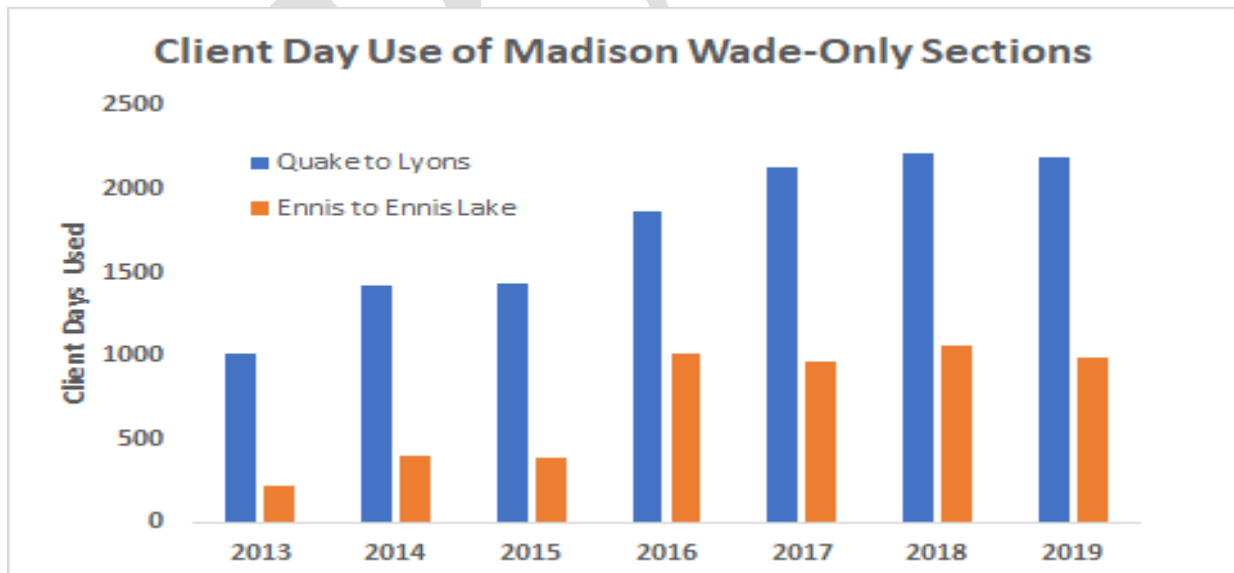


Figure 6. Commercial use client days used in wade-only reaches of the upper Madison River.



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FWP has been gauging the concerns of the public about Madison River recreation on a regular basis since 2008 through surveys, listening sessions, and multiple citizen advisory committees. The two most recent surveys are the best characterization of current conditions and sentiments. In 2016, FWP conducted a mail survey focusing on angler satisfaction on the upper river between Hebgen Dam and Ennis Reservoir. Data were collected from 2,921 respondents (46% residents, 54% non-residents) who reported fishing in the Madison River drainage between 2001 and 2015. When asked if their fishing on the river had changed over time, 59% said yes, and the number one reason (62% of responses) was “to seek times/places where there are fewer other anglers and/or people using the river.” Respondents were also asked to rank the acceptability of various conditions on the river in two reaches (Hebgen Dam to Lyons Bridge FAS and Lyons Bridge FAS to Ennis Dam) during different seasons. In the Hebgen Dam to Lyon's Bridge FAS section, the only condition that was viewed as more unacceptable than acceptable was the the number of people (and their vehicles) at river access points. Of all respondents, 45% felt that number was either very unacceptable or unacceptable, compared to only 26% who viewed it as acceptable or very acceptable (Table 5). In the Lyon's Bridge FAS to Ennis Dam section, conditions that a majority of respondents identified as unacceptable than acceptable were the number of people (and their vehicles) at river access points and the number of people float fishing. For the number of people and vehicles at access points, 42% felt the number was either very unacceptable or unacceptable versus 26% who felt it was acceptable or very acceptable. For the number of float anglers, 41% felt the number was either very unacceptable or unacceptable, while only 30% felt it was acceptable or very acceptable. The other conditions people were asked to judge in terms of acceptability included a) the number of people bank/wade fishing, b) the quality of the fishing experience, c) the number of people using boats to access the river for recreational purposes other than fishing, and d) the number of people using boats to access the river to bank/wade fish in sections of the river that are closed to fishing from boats. For all of these conditions, there was either a similar number of people expressing unacceptability versus acceptability or there were more people indicating acceptability (Table 5).



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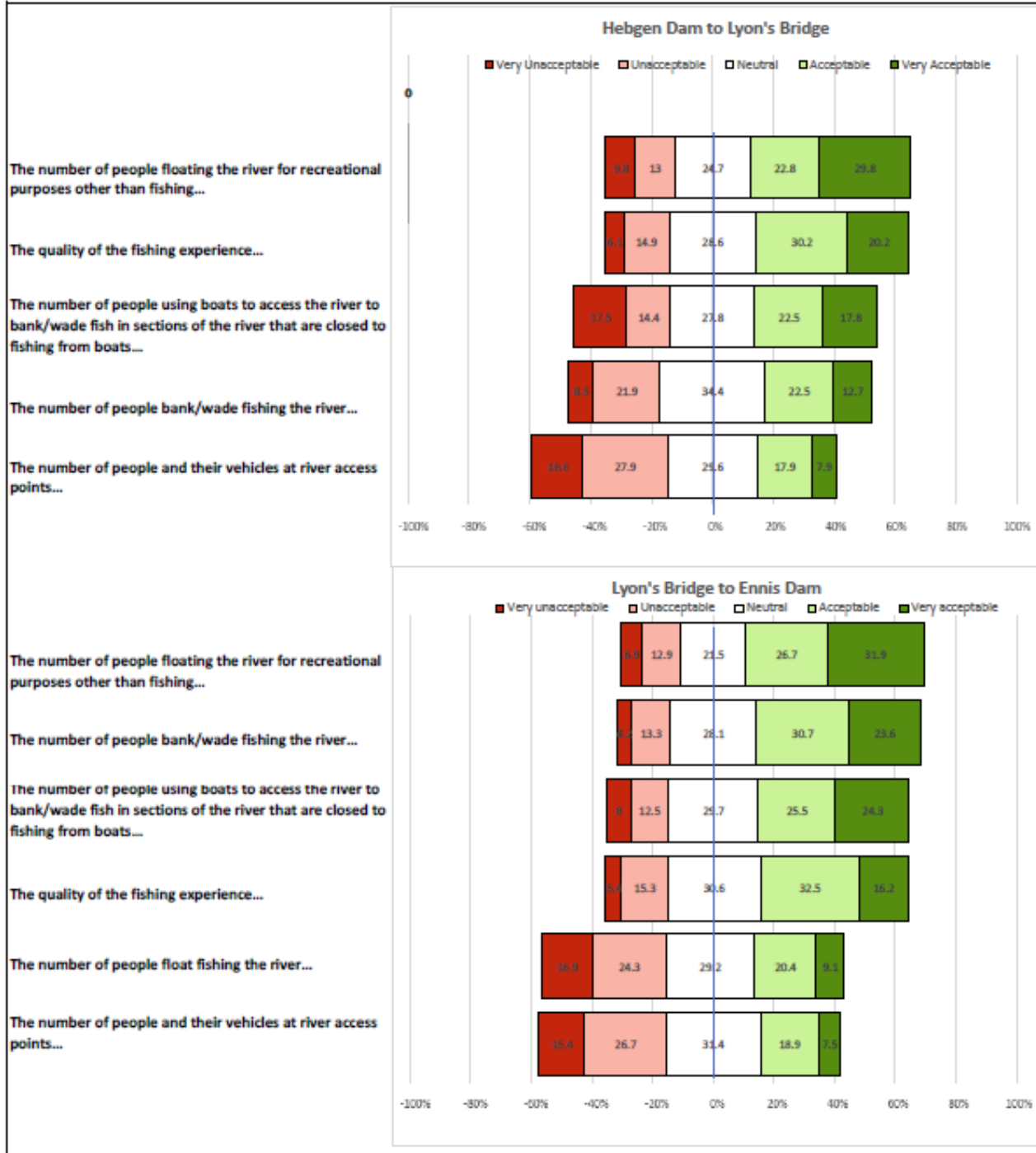
Table 4. Locations of trips by commercial outfitters/guides in 2019. Sites listed in the direction from upstream to downstream. Blue highlighted areas are above Ennis Dam (upper river) and green highlighted areas are below Ennis Dam (lower river)

Access Site	Put-in	Take-out	Total	% Upper Madison	% Lower Madison	% Madison Total Use
Slide Inn/GNF area	107	10	117	0.47%		0.40%
Raynold's Pass	539	197	736	2.99		2.70%
Three Dollar Bridge	248	183	431	1.7%		1.6%
Pine Butte/Eagle's Nest	304	235	539	2.2%		1.9%
West Fork area	15	35	50	0.2%		0.2%
Lyons Bridge	3604	76	3680	14.9%		13.3%
Windy Point	1458	673	2131	8.6%		7.7%
Palisades	1193	1326	2519	10.2%		9.1%
Ruby Creek	1070	1620	2690	10.9%		9.7%
McAtee Bridge	773	1221	1994	8.1%		7.2%
Storey Ditch	869	1616	2485	10.1%		9.0%
Varney Bridge	1546	1978	3524	14.3%		12.7%
Eight Mile Ford	436	646	1082	4.4%		3.9%
Burnt Tree Hole	60	385	445	1.8%		1.6%
Ennis/Town	66	1418	1484	6.0%		5.3%
Valley Garden	186	294	480	1.9%		1.7%
Channels Ranch	10	1	11	0.0%		0.0%
Clute's/Ennis Lake	10	247	257	1.0%		0.9%
Bear Trap Canyon	6	1	7		0.2%	0.0%
Warm Springs	1301	2	1303		42.6%	4.7%
California Corner	19	0	19		0.6%	0.1%
Canaday/Red Mtn	80	0	80		2.6%	0.3%
Damselfly (Cherry Creek)	29	200	229		7.5%	0.8%
Black's Ford	14	630	644		21.1%	2.3%
High Bank	0	90	90		2.9%	0.3%
Greycliff	75	533	608		19.9%	2.2%
Cobblestone	2	0	2		0.1%	0.0%
Milwaukee/I-90/Blkbi	2	67	69		2.3%	0.2%
Headwaters	0	6	6		0.2%	0.0%
Other	21	1	22			0.1%
Unknown	11	0	11			0.0%
Madison Total			27745			
Upper Madison Total			24655			
Lower Madison Total			3,057			



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Table 5. Selected results from the 2016 mail survey of Madison River anglers. Anglers were asked to rate acceptability (scale of 1 to 5) of various conditions on two stretches of river. Shown are the responses to conditions during the summer (June 15-September 30). Percent of respondents in each category is provided in the colored block.





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The 2016 survey results were a central part of the rationale for establishing a Negotiated Rulemaking Committee (NRC) in December 2018. The NRC aimed to seek consensus among stakeholders to resolve these areas of dissatisfaction resulting from crowding and conflict. Although the NRC did not reach consensus on any items, it generated much constructive dialogue regarding potential tools and solutions to crowding. An online survey was used from November 26, 2019 to January 6, 2020 to gauge the public's views on some of these approaches and helped identify potential alternatives for consideration as part of a recreation management plan (Table 6). Survey participants were asked about a proposed management goal, to ***“Manage recreational use of the Madison River in a manner that ensures long term health and sustainability of the fishery, diversifies angling opportunity while reducing conflicts, and sustains the ecological and economic benefits of the river to Montanans and our guests.”*** A total of 7,577 surveys were taken, and virtually all, residents, non-residents, and commercial outfitters all agreed this goal was important, with some minor differences among the sub-goals. All groups agreed that maintaining a healthy fishery was very important, while commercial outfitters felt most strongly that maintaining the ecological and economic benefits were important. Diversity of angling experiences received the highest scores for importance by the non-commercial anglers. When asked about their view of commercial outfitter management, upper river social conflict management, lower river recreational use management, and upper river angler use management, non-commercial anglers gave the “no limits” or “no restrictions” alternatives low marks in terms of acceptability. Those low marks have been interpreted to mean non-commercial anglers want to see change and active recreation management on the Madison River. The non-commercial group gave the highest levels of acceptability to the alternative to reduce commercial outfitter numbers below 2018 levels, and to preserve the primitive nature of the lower Madison below Greycliff FAS. Resident anglers preferred rest/rotation restrictions as a means of social conflict management, whereas non-residents favored enhanced walk/wade restrictions. Residents favored a reapportionment of angler use on the upper river to restrict the number of non-resident anglers to 50% of overall use. Non-residents did not indicate a clear preference among the alternatives offered. Commercial outfitters did not favor any of the alternatives regarding outfitter management, social conflict management or angler use management on the upper river, but did favor the alternative to evaluate crowding and conflict on the lower river.

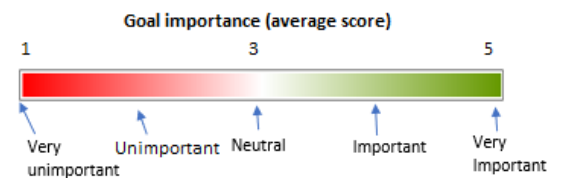
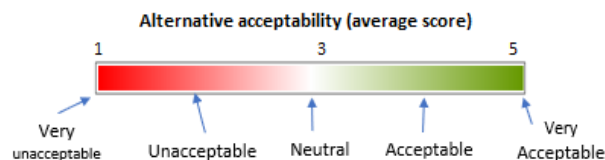


MONTANA FISH, WILDLIFE & PARKS

Table 6. Alternative acceptability for various management approaches from 2019/20 online survey.

		Goal Importance (average score)		
Proposed Management Goal	Healthy Fishery	4.48	4.42	4.68
	Economic Viability	3.28	3.69	4.29
	Diversity of angling experiences	3.74	3.87	3.32

		Alternative Acceptability (average score)		
		Non-commercial		Commercial
		Residents	Residents	Outfitters
Commercial Fishing Outfitter Management	No Limits	1.85	1.88	2.61
	Cap # of outfitters at 2018 level	2.24	2.32	2.47
	Cap # of trips of outfitters at 2018 level	3.1	3.23	2.75
	Reduce number of trips below 2018	3.71	3.5	2.22
Social Conflict Management on Upper River	No restrictions	1.84	2.01	2.86
	Access Site social conflict mgt	2.5	2.66	3.19
	Rest-rotation	3.51	3.09	2.01
	Walk-wade	3.22	3.45	1.79
	Daily boat launch restrictions	2.92	3	1.88
Lower River Recreational Use Management	Status Quo	2.24	2.47	3.07
	Evaluate level of crowding and conflict	3.32	3.45	3.64
	Prohibit commercail use below Greyclif	3.19	3	1.61
	Preserve primitive nature below Greycli	3.58	3.69	2.59
Angler Use Management on Upper River	No Limits	1.96	2.4	2.6
	Non-commercial use cap at 2018 level	2.43	2.66	2.7
	50:50 resident:non-resident cap	3.44	2.29	2.35
	Citizen's Day	3.11	2.11	2.11





MONTANA FISH, WILDLIFE & PARKS

III. Management Alternatives

The Management Goal for Madison River Recreation Use includes three major objectives: ***To manage recreation use of the Madison River in a manner that 1) ensures long-term health and sustainability of the fisheries, 2) diversifies angling opportunity while reducing conflicts, and 3) sustains the ecological and economic benefits of the river to Montanans and our guests.*** These objectives were well supported by all user groups in the most recent public scoping efforts. The alternatives presented below will be evaluated for their ability to achieve those objectives.

Alternative 1.0: Non-regulatory alternative

This approach is similar to the Status Quo alternative except that FWP would not engage in any active management of the river other than that related directly to fisheries management. The premise of this approach would be to avoid decisions about proper levels of use or the types of use on rivers. Access site management would be strictly focused on infrastructure/maintenance needs at the sites and not as it relates to river use.

- 1.1: Remove existing walk/wade sections
- 1.2: No commercial allocation system
- 1.3: No rest-rotation sections
- 1.4: No non-commercial allocation system evaluation
- 1.5: No restrictions on commercial use or site development in lower river
- 1.6: Remove existing requirements for the Special Recreation Permit (SRP)

Alternative 2.0: Status Quo alternative – No Action

This approach makes no attempt to regulate recreation use on the river, adhering to the philosophy that self-regulation is the most practical and efficient way to manage a system with growing use. A key premise of this alternative is that use levels will only increase as Montana's tourism industry grows, and the types of use will change. As these changes occur, a dynamic flux will follow, with some users stopping recreation on the river, while others embrace the new patterns of use. Responding to the changing needs would be FWP's primary management responsibility.

- 2.1: No modification to existing walk/wade sections
- 2.2: No commercial allocation system
- 2.3: No rest-rotation sections
- 2.4: No non-commercial allocation system evaluation
- 2.5: No restrictions on commercial use or site development in lower river
- 2.6: Maintains existing Special Recreation Permit (SRP)

Alternative 3.0: Social Conflict Management alternative

This approach makes the assumption that the river is large and diverse enough to provide opportunity for all user types even in the face of increasing use, and FWP would therefore focus on redistributing recreational users or controlling times of use in order to reduce crowding and



MONTANA FISH, WILDLIFE & PARKS

conflict on the river and at access sites. Although this approach would create times and places where certain users are excluded, the tradeoff is that there would be no limit to overall numbers of users. This means that commercial use could grow unimpeded and non-commercial users would not face uncertainty about their ability to use the river or be forced to participate in a lottery or permit system to gain entry to the river.

3.1: Social conflict management: walk/wade sections

This alternative would create sections that prohibit the use of a boat to gain access for fishing. Currently, two walk/wade sections exist where boats can be used to access fishing areas within the designated sections, but fishing from a boat is not allowed: Quake Lake to Lyons Bridge FAS and Ennis FAS to Ennis Reservoir. The rationale for walk/wade-only sections is to provide more opportunity for wade anglers in limited access areas where boats have an advantage and to provide a reduction in conflict between boat anglers and wade anglers. Two options are being considered:

3.1.1: Seasonal walk/wade, June 15 to September 30

Friday to Sunday: Watercraft *cannot* be used to access fishing from Quake Lake to Lyons Bridge FAS and Ennis FAS to Ennis Reservoir.

Monday to Thursday: Watercraft *can* be used to access fishing, but no fishing from watercraft from Quake Lake to Lyons Bridge FAS and Ennis FAS to Ennis Reservoir (current regulation).

3.1.2: Seasonal walk/wade, June 15 to September 30, with time of day restriction

Friday to Sunday: Watercraft *cannot* be used to access fishing from Quake Lake to Lyons Bridge FAS and Ennis FAS to Ennis Reservoir, *before noon*.

Monday to Thursday: Watercraft *can* be used to access fishing, but no fishing from watercraft from Quake Lake to Lyons Bridge FAS and Ennis FAS to Ennis Reservoir (current regulation).

3.2: Social conflict management: rest-rotation

Rest-rotation days are intended to provide the general angling public an opportunity to utilize the resource in the absence of commercial users. When the commercial use of a section of river is high, the exclusion of outfitters on rested days is intended to provide less crowded conditions for the non-commercial user. Rest-rotation has been used for this purpose on other Montana Rivers starting with the Beaverhead and Big Hole rivers and most recently on the West Fork of the Bitterroot. Each river is unique and any rest-rotation system requires close evaluation to ensure it is effective at reducing crowding and/or conflict while minimizing undesired consequences, such as drawing in so many users that crowding becomes more acute than before; or creating crowding elsewhere on the river due to displaced commercial users. Three options are being considered:

3.2.1 Two days per week rest-rotation seasonally June 15 to September 30

Saturday: Quake Lake to Lyons Bridge FAS: no commercial activity

Sunday: Burnt Tree Hole FAS to Ennis FAS: no commercial activity



MONTANA FISH, WILDLIFE & PARKS

3.2.2 Two days per week rest-rotation seasonally June 15 to September 30

Saturday: Varney Bridge FAS to Ennis FAS: no commercial activity

Sunday: Lyons Bridge FAS to Palisades Day Use Area: no commercial activity

3.2.3 Six days per week rest-rotation year-round

Sunday: Quake Lake to Lyons Bridge FAS: no commercial activity

Saturday: Lyons Bridge FAS to Palisades Day Use Area: no commercial activity

Friday: Palisades Day Use Area to McAtee Bridge FAS: no commercial activity

Thursday: McAtee Bridge FAS to Varney Bridge FAS: no commercial activity

Wednesday: Varney Bridge FAS to Ennis FAS: no commercial activity

Tuesday: Ennis FAS to Ennis Reservoir: no commercial activity

3.3: Social conflict management: Access Site Management

Anglers have indicated an unacceptable level of crowding and conflict at parking areas and boat ramps, with unacceptable levels of wait time to put in and take out. Under this management alternative, FWP would address these issues in one or both ways described below. However, management actions that increase boat launching proficiencies could transfer congestion and conflict from the access sites to the water.

3.3.1 FAS Rangers

FWP would hire staff to help direct traffic at FWP boat ramps and staging areas, to ensure vehicles and trailers are arranged most efficiently in parking areas.

3.3.2 Access Site Education

Installation of signage to encourage efficient use of boat ramps and proper etiquette when launching.

3.3.3 Facility improvements

FWP engineers would redesign sites as necessary to expand parking and provide staging areas for boat prep in advance of launching.

3.4: Social conflict management: Restrict commercial fishing below Greycliff FAS

The section from Greycliff FAS to the Missouri River gets less than 1% of all commercial use on the river. Floaters in this stretch of the river value a primitive floating experience with unique scenery and plentiful wildlife. Prohibiting commercial fishing outfitting from Greycliff FAS to the Missouri River would protect against the growth and establishment of a commercial use presence that some recreationists view as inconsistent with a primitive experience.

3.5: Social conflict management: Primitive designation below Greycliff FAS

Below Greycliff FAS river use is lower than elsewhere on the river, in part because of limited access and limited fishing. Floaters in this reach value a primitive floating experience with unique scenery and plentiful wildlife. Two options are considered:

3.5.1 No new access acquisitions in the primitive section between Greycliff FAS and Milwaukee FAS



MONTANA FISH, WILDLIFE & PARKS

3.5.2 Limited development in primitive section

New access acquisitions would have limited development to maintain the primitive nature by limiting vessel or float tube access to carry-in only.

Alternative 4.0: User Growth Limitations Alternative

This management approach regulates numbers of recreational users in order to decrease crowding and conflict among users. It seeks to stem the overall growth of river use by commercial and non-commercial users alike, with the assumption that users prefer to have the freedom of choice when it comes to where, when, and how they use the river. The satisfaction that comes from this would counterbalance some of the dissatisfaction that comes from conflict with other user types. In this regard, the recreational experience would be self-regulating to the extent that all users would find times and locations that suit their expectations, or they would seek opportunities elsewhere. Although self-regulation may not be satisfactory to those whose use has already been altered by crowding, this alternative would provide some level of certainty that recreational opportunities would not be diminished any further by controlling overall growth.

4.1: Commercial Caps: Cap the total number of outfitter trips

This could be done in a variety of ways, but would need to address issues such as how to allocate trips among current outfitters and how to allow entry of new outfitters under a cap.

4.1.1: Cap the total number of outfitter trips at predicted 2020 limits pre-pandemic (15,770)

This alternative was intended to provide a higher cap limit compared to the other two cap alternatives. Previous to the global corona-virus pandemic this limit was predicted to be at around 15,770. It is now anticipated that the actual outfitter trips for 2020 are likely to be much reduced compared to recent years. 4.1.2: Cap the total number of outfitter trips at 2019 limits (13,990)

4.1.3: Cap the total number of outfitter trips at 2018 limits (12,210)

4.2: Commercial trip assignment

The assignment of trips could occur in several ways. No preferred alternative on how trips are allocated is presented here, but the approach would operate within the established cap. Any implemented allocation system would not be implemented until 2021 and would be closely monitored and evaluated to ensure the allocation system does not allow for violation of the cap. Four options are considered. The fixed allocation and historic use allocation methods are dependent upon clarification in statute and administrative rule so outfitters could transfer river use days without transferring their business in its entirety:

4.2.1. Client-driven allocation method

If a cap on the total number of trips is established, this system would allow clients to reserve trips through an SRP-permitted outfitter until the trip cap is met. A “general pool” is established where 75% of the total trips would be available for use by clients beginning January 1 of the year on a first come basis. The remaining



MONTANA FISH, WILDLIFE & PARKS

25% would be allocated each month beginning in April based on previous years use. Any unused trips from a monthly portion would be rolled over to the next month. Canceled trips would return to the general pool and again be available for booking clients through outfitters. This system would not provide each outfitter with an allocated number of trips.

4.2.2. Historic-use allocation method

This approach would assign trips to outfitters who hold an SRP based on their activity during the year chosen for the cap. Outfitters would be assigned to a tier based on their number of trips taken (e.g. < 20, 21-40, 41-100, 100+ trips). Trips could be transferred to other outfitters, but any outfitter purchasing transfers of more than 150 days would have to demonstrate use of the purchased days within 5 years. At the end of the five-year period, if the outfitter has not used any portion of the days purchased, those days would be forfeited and returned to a pool for redistribution. Outfitters who subsequently have three or more consecutive years where trip numbers are less than the lower bracket of their tier would drop to that lower bracket. The difference between their original allocation and the lower bracket will be forfeited to a pool that could then be distributed via drawing to existing or new outfitters. In addition, each outfitter would have 10 “flex days” they could use in 2 out of every 3 years. Flex days would not count towards an outfitters’ cap, and would not be transferrable. If flex day use resulted in an exceedance of the cap, the allocation would be adjusted downward (e.g., 10 days down to 5 days) in an iterative fashion until overall use falls within the cap.

4.2.3. Plan identified by current SRP holders

This approach involves letting the current Special Recreation Permit (SRP) holders who operate on the Madison River create their own plan to distribute allocated days within the established cap. FWP would work collaboratively with the BLM and SRP holders to develop a method acceptable to the majority.

4.2.4. Unlimited-use allocation method

Under this approach, trips would be allocated to outfitters who hold an SRP, based on their activity during the year chosen for the cap. Trips could then be transferred to other SRP holders. New outfitters could only gain access to trips by first obtaining an SRP permit and then purchasing transferred days. Each year, outfitters could also purchase any number of additional trips beyond their allocation, but would pay to the department a 15% tax of gross proceeds to do so. These additional trips would be purchased annually, and would not be added to their allocation.



MONTANA FISH, WILDLIFE & PARKS

4.3: Non-commercial Caps

On an annual basis, about 89% of fishing on the upper Madison comes from non-commercial anglers. Angler use has increased over the past 20 years and in 2017 was 207,000 angler days. Information on trends in non-angling use of the river is less clear, but overall use on the river has been increasing and is expected to continue to rise, regardless of any cap on commercial use. Relatively speaking, the upper river is dominated by anglers, whereas the lower river is dominated by non-anglers. Management tools such as walk/wade, rest-rotation, and access site improvements would help maintain the quality of experience, but will lose effectiveness as overall use increases. Setting limits or caps on non-commercial use is premature because of a lack of information related to the desires and concerns of non-angling recreationists on the river. However, instituting a comprehensive data-gathering tool is recommended in order to get more information on all current use and type of use on the river. Such a system could be implemented by requiring an unlimited no-cost river use stamp. Increasing use levels would probably necessitate a cap or limit on all use in the future to help protect the resource and maintain quality of experience.

4.3.1: No-cost No-limit Madison River Stamp

Any recreational user would be required to obtain an annual stamp from FWP. Mandatory reporting of river use would be required to ensure access to the river in future years.

4.3.2: Evaluation of lower river conflict

FWP staff would interview and observe user behavior on the lower river to better understand and quantify crowding and conflict. Issues to be evaluated would include access site suitability, infrastructure development, conflict between anglers and non-anglers, and sources of problems on a time-of-day and seasonal basis.

Alternative 5.0: Madison River Recreation Goal Alternative (Preferred Alternative)

This combination of management alternatives would achieve all three objectives of the management goal by using a blend of tools. The health of the fishery would be maintained by eliminating growth of commercial outfitters and evaluating growth control approaches for non-commercial users, which should also stabilize catch-and-release mortality of brown and rainbow trout. Economic viability would be preserved by allowing commercial outfitters to maintain current use and committing to enact an allocation methodology that would be acceptable to commercial outfitters by enabling them to continue to recruit customers and grow their businesses. A trial period for the Madison River stamp would be intended to ensure that non-commercial use is well-understood before management restrictions occur, and that any system enacted would be as simple as possible and not serve as a deterrent for those seeking to use the river. The diversity of angling would be maintained through rest-rotation, which would help to eliminate conflict between commercial/non-commercial users. Moreover, the walk/wade alternative would help to eliminate conflict between wade anglers and boat anglers. Finally, the primitive status for the lower river would serve as a refuge for all types of floaters (angling and



MONTANA FISH, WILDLIFE & PARKS

non-angling) who seek a seclusive and quiet experience. Individually, these management actions would not achieve the Management Goal for Madison Recreation Use: ***To manage recreation use of the Madison River in a manner that 1) ensures long-term health and sustainability of the fisheries, 2) diversifies angling opportunity while reducing conflicts, and 3) sustains the ecological and economic benefits of the river to Montanans and our guests.*** However, collectively, these management actions would be expected to meet the above stated objectives:

4.1.2: Cap the total number of outfitter trips at 2019 limits.

A preferred alternative for allocation method has yet to be determined. FWP hopes to seek input from the outfitting and guiding industry during the public comment period on how best to allocate trips.

3.2.2: Two days per-week rest-rotation seasonally, June 15 to September 30

Saturday: Varney Bridge FAS to Ennis FAS: no commercial activity

Sunday: Lyons Bridge FAS to Palisades Day Use Area: no commercial activity

3.1.1: Seasonal walk/wade, June 15 to September 30

Friday to Sunday: Quake Lake to Lyons Bridge FAS and Ennis FAS to Ennis Reservoir: no watercraft or floatation device can be used to access fishing

Monday to Thursday: Quake Lake to Lyons Bridge FAS and Ennis FAS to Ennis Reservoir: no fishing from watercraft or floatation devices; however, watercraft and floatation devices can be used to access fishing (current regulation)

3.3: Access Site Management

3.5.2: New access acquisitions below Greycliff FAS will have limited development to maintain the primitive nature by limiting vessel or float tube access to carry-in only.

4.3.1: No-cost No-Limit Madison River Stamp

Adaptive Management of Madison River Recreation Management Actions

Because of uncertainty based around the effectiveness of some of the alternatives it is recommended that there be a thorough evaluation of any actions two years after implementation, and on a regular 5-year cycle thereafter. It is also recommended that any management actions or adopted rules be adjusted as needed ***to manage recreational use of the Madison River in a manner that 1) ensures the long-term health and sustainability of the fisheries, 2) diversifies angling opportunity while reducing conflicts, and 3) sustains the ecological and economic benefits of the river to Montanans and our guests.*** Any adjustments to rules would require the public process required for amendments to rulemaking.



IV. Analysis of Alternatives

The Madison River Recreation Environmental Assessment (EA) identifies five management alternatives: 1.0 Non-regulatory; 2.0 Status quo; 3.0 Social conflict management; 4.0 User growth limitations; and 5.0 Madison River recreation goal alternative. This analysis addresses potential effects of each management alternative on recreation, natural/physical resources, heritage, and economics of the Madison River and predicts the efficacy of the management alternative to achieve the desired goals. For the alternative analysis, it is assumed that the trends in both commercial and non-commercial use will continue at rates comparable to the prior nine years.

Predicted Effects on Recreation Values

The Madison River is a popular destination for trout anglers worldwide. Angling occurs year-round in most reaches of the river but is less common during winter. Both wade and float fishing opportunities are exceptional, with two reaches of the Madison currently managed for wade-angling only.

Currently, 72 publicly owned or managed access sites exist along the Madison River and its reservoirs, and recreational floating is popular throughout the river corridor. Because of the varied water conditions, the Madison appeals to all types and skill levels of boaters. The upper reach of river immediately below Quake Lake as well as the Bear Trap Canyon Wilderness appeal to whitewater enthusiasts while much of the river's beautiful scenery can be experienced by less-experienced boaters. In addition to providing access to the river, numerous access sites provide opportunities for picnickers, birders, campers, hikers, bikers, sunbathers, hunters, photographers and other outdoor enthusiasts to enjoy the Madison River. Commercial service providers are utilized by those who seek the knowledge and skill of a guide or outfitter to enhance their Madison River recreation experience.

1.0 Non-regulatory Alternative Analysis on Recreation Value

This alternative would homogenize recreational opportunities throughout the river from Hebgen Reservoir to Ennis. Increased conflict between boat and wade anglers would likely occur in the current walk/wade only reaches, which could result in further displacement of anglers (walk/wade anglers in this case) away from the Madison River. This alternative would likely provide some temporary crowding relief in the float fishing section (Lyons Bridge FAS to Ennis FAS), where boat anglers from those reaches would spread throughout the two walk/wade only reaches. Data collected by FWP suggest that angler use levels in the walk-wade sections represent at least 25% of the angling pressure on Section 2 of the Madison River. If allowing fishing from boats throughout the river results in a reduction in walk/wade anglers, overall angling pressure may initially drop. However, data trends on Madison River use suggest that fishing from boats in the walk/wade reaches may climb to exceed current angling pressure.



MONTANA FISH, WILDLIFE & PARKS

In 2019, 222 Special Recreation Permits (SRP) were issued to commercial operations on the Madison River. Under the Non-regulatory Alternative this permit program would be eliminated, although commercial users may still be required to obtain a permit(s) for commercial use of federal lands. The mandatory reporting component of this program provides FWP staff with much needed information on trends in numbers and patterns of use by commercial outfitters that are crucial for effective management and decision making. Without this program, this information could only be collected through self-reporting by outfitters or through expensive on-the-ground surveys.

2.0 Status Quo Alternative Analysis on Recreation Value

The quality of recreational experiences would likely drop across most river users if the status quo alternative is elected. Both the 2016 and 2019 surveys showed that the current levels of crowding and conflict on the Madison River and at the access sites were largely unacceptable to commercial and non-commercial users. The 2016 survey results showed that 58.5% of respondents reported their fishing use of the river had changed over time, a sentiment expressed more frequently by residents (70%) than non-residents (30%). The most common way that use had changed was fishing the Madison less frequently (60%) fishing the Upper Madison earlier or later in the season (35%), fishing different stretches of the upper Madison (30%), and fishing earlier or later in the day (15%). The 2019 scoping survey found that 50% of respondents reported they had stopped fishing the Madison River. Respondents were not asked to describe how their uses had changed, but how many days in the previous five years they conducted various types of recreational use. Those who reported they had stopped fishing the Madison reported an average of 1.3 fewer days of bank/wade fishing, 3.7 fewer days of float fishing, with a very slight (< 1 days) decrease in camping, recreational floating and inner-tubing. Based on these two surveys, it could be expected that under the Status Quo, the continued growth in recreational use on the Madison would probably increase displacement to other rivers and result in a change in use patterns with unknown consequences.

3.0 Social conflict management Analysis on Recreation Value

Alternative 3.1: Walk/Wade Restrictions analysis on recreation value

This alternative has a high likelihood of being controversial with the public. Over the past decade, the issue of boats being in the walk/wade section was the second most common complaint voiced by the public. During the scoping survey in 2019, over 50% of respondents wanted boats to be excluded from this section, with no access or fishing from a boat.

Alternative 3.1.1. Seasonal Walk/Wade restrictions analysis on recreation value

Under this alternative, walk/wade anglers would have two days per week without boat anglers being present in the same section. The remaining days of the week would be status quo. Conversely, boat anglers would be displaced to another section of the river, or to another river, for these days. This alternative would have a positive effect to the recreational value of



MONTANA FISH, WILDLIFE & PARKS

walk/wade angling only, and a negative effect to the recreational values of anglers desiring to use boats in the walk/wade sections for access to fishing.

Alternative 3.1.2 Seasonal Walk/Wade with time of day restrictions analysis on recreation value

Under this alternative, walk/wade anglers would have the potential of 12 hours per week without boat anglers present in the section. The exclusion of boats before noon would also give the wade angler time to access and fish remote areas in advance of boats. The remaining days of the week would be status quo. Conversely, boat anglers would be displaced to other sections of the river for 12 hours per week. Although this alternative may be a minor inconvenience for float fish anglers because it would limit them to less than a full day of fishing, it may not provide enough relief to fully address the concerns expressed by the walk/wade only anglers.

Alternative 3.2: Rest-Rotation Restrictions Analysis on Recreation Value

Rest-rotation days are intended to provide the general angling public an opportunity to utilize the resource in the absence of commercial users. When the commercial use of a section of river is high, the exclusion of outfitters on rested days is intended to provide less crowded conditions for the non-commercial user.

The dominance of commercial use is most acute during summer months in the upper Madison River. In the float reach on the upper Madison River between Lyons Bridge FAS and Ennis FAS, the year-round use by commercial users averages 50% of total use. When examined during the busy summer months, the use is significantly higher, and during some days at Lyons Bridge FAS commercial use is 100% of total use. On average, at Lyons Bridge FAS commercial users represent about two-thirds of the use between May and October.

Alternative 3.2.1 Seasonal Rest-Rotation 2 sections: Quake Lake to Lyons Bridge FAS, and Burnt Tree FAS to Ennis FAS analysis on recreation values

Prohibiting commercial use on Saturdays from June 15 to September 30 between Quake Lake and Lyons Bridge would have a minor effect on recreational values, since this reach of river traditionally has relatively few commercial trips, which in 2018 amounted to 10.9% of all commercial launches in the upper river. Prohibiting commercial use from Burnt Tree FAS to Ennis FAS would provide an area for non-commercial anglers to use; however, this reach is already one of the lightest used commercial areas throughout the float section (3.2% of upper river launches). For the non-commercial angler looking for quality recreational experiences without the high levels of commercial use, this alternative provides little relief.

This alternative has a high potential for public controversy. The general public has strongly indicated over the past decade through various means that fishing pressure from commercial trips is too high and has resulted in displacement of non-commercial anglers. This alternative would not likely satisfy the general public's desire to provide high quality angling opportunities



MONTANA FISH, WILDLIFE & PARKS

without the high levels of commercial use. This alternative is likely to be acceptable to commercial users since they little use the proposed sections.

Alternative 3.2.2 Seasonal Rest-Rotation 2 sections: Varney Bridge FAS to Ennis FAS, and Lyons Bridge FAS to Palisades Day Use Area analysis on recreation values

This alternative may have more potential to be effective at enhancing recreational values of non-commercial anglers than alternative 3.2.1. Anglers who are requesting angling opportunities with less crowded conditions may be satisfied with this rest rotation alternative, assuming that use levels decrease with the prohibition of commercial use in these sections on these days. Non-commercial anglers may return to the Madison River to utilize these rest-rotation sections at high levels, resulting in little overall reduction in crowding. This is particularly possible if Bozeman and the surrounding areas continue to grow. This alternative would be likely to have an impact to commercial anglers, as they would be relegated to using other sections of the river on these days, which may increase crowding on those sections. However, non-resident anglers (the majority of commercial users) typically have different thresholds of crowding perception than resident anglers (Horton and Clark 2003). In addition, this alternative would use Sundays as a rest rotation day because Sundays have the lowest level of commercial use each week.

This alternative has a high risk of generating public controversy among commercial guides and outfitters, as they would be allowed to use less of the river than has traditionally been the case. Concentrating commercial use may reduce the experience of some non-resident anglers; however, non-resident anglers have higher crowding tolerances than resident anglers (Horton and Clark 2003). Also, commercial guides and outfitters may be required to use parts of the river that may have undesirable conditions (e.g., high winds), which may result in greater difficulty rowing and angling.

3.2.3 Year-round Rest-rotation 6 sections: Quake Lake to Lyons Bridge FAS, Lyons Bridge FAS to Palisades Day Use Area, Palisades to McAtee FAS, McAtee to Varney Bridge FAS, Varney to Ennis FAS, and Ennis to Ennis Lake analysis on recreation values

Implementing rest rotation six days of the week may show the highest increase in recreational value by non-commercial river users, and the lowest recreational value for commercial users. This proposal may provide non-commercial users the opportunity to experience use on different days throughout the upper Madison without competing with or being crowded out by commercial users. Six days of the week commercial users would have use of the remaining five stretches of the upper Madison. Dependent upon which stretch is rested, commercial users may have to take shorter float trips or pull a boat out to route around a rested stretch. This proposal would likely have the greatest negative impact of the rest-rotation proposals on the commercial users.



MONTANA FISH, WILDLIFE & PARKS

Alternative 3.3: Management of FAS's to reduce social conflict analysis on recreation values.

At many upper Madison River access sites, use is more than the access sites can accommodate. This alternative on its own would probably not have enough impact to positively change the current attitudes of users on the Madison River, but it may help to address some of the current conflict and crowding at access sites.

3.3.1 FAS Rangers analysis on recreation values

Having staff available at sites to direct traffic on boat ramps and in staging areas would help to ensure that parking areas are used most effectively and could alleviate some congestion issues at the sites, which can result in conflict. However, increased staffing at the access sites alone would likely not alleviate social conflict issues that occur on the river. Because the use at many sites is often more than they are able to accommodate, the FAS Rangers would have a difficult time managing the overflow. Increasing the efficiency at boat ramps would put more boats on the river more quickly and could heighten the social conflict on the river. Commercial use would likely increase in the remaining unrestricted stretches, and the displacement has the potential to cause increased pressure at the access sites and on the river.

3.3.2 Access Site Education analysis on recreation values

Increased education by using signs and other educational material may decrease social conflict at access sites by educating recreation users about proper conduct at sites. Education focused on proper boat ramp etiquette may decrease social conflict within the access sites by allowing more efficient launching of boats. Recreational values would likely increase within the FAS's. However, efficient use of FAS's and the launching of boats could increase the numbers of boats launching over a given period of time, and result in increased social conflict on the water.

3.3.3 Facility improvement analysis on recreation values

Improving facilities at launch sites on the Madison River may decrease social conflict by creating better traffic flow patterns and defined staging areas that help users use sites more efficiently. Improved facilities at FAS sites could have a negative impact on natural resources depending on the scope of the work involved. This proposal may provide the opportunity to get more boats on the water over a given period of time, which could increase the number and density of boats on the river and result in increased social conflict on the water.

Alternative 3.4: Social conflict management: Restrict commercial fishing below Greycliff FAS analysis on recreation values.

This stretch of river does not hold much recreation value to commercial outfitters because of the limited fishery and the large distance between boat ramps. The highest recreational value of this stretch is in its unique geography, ample wildlife, and primitive aspects. Prohibiting commercial use would do little to reduce overall river use because in 2018 there were only 93 commercial



MONTANA FISH, WILDLIFE & PARKS

launches at Greycliff and Cobblestone FASs. However, it would increase the recreation value of this stretch to non-commercial river users who are concerned with the potential for expanded commercialization.

Alternative 3.5: Social conflict management: Primitive designation below Greycliff FAS analysis on recreation values

Below Greycliff FAS river use is lower than anywhere else on the river, in part due to limited access and limited fishing. In 2018, there were 18,778 unique visits to the Greycliff and Cobblestone FAS, which includes floaters, campers and wade anglers. This compares to 266,281 unique visits to the section of the lower river from Warm Springs to Blacks Ford FAS. Floaters in this stretch of the river report that they value a primitive floating experience with unique scenery and plentiful wildlife.

3.5.1 No new access acquisitions in the primitive section between Greycliff FAS and Milwaukee FAS analysis on recreation values

No new access acquisitions between Greycliff FAS and Milwaukee FAS would likely have high recreational value for users seeking a more primitive solitary experience on the river with a greater chance to view a variety of wildlife. River users who would prefer more access to the river and shorter distances between access sites may have decreased recreational value with this proposal. Because access at existing sites will not be restricted, use in this section is likely to increase slowly over time.

3.5.2 New access acquisitions will have limited development to maintain the primitive nature by limiting vessel or float tube access to carry-in only analysis on recreation values

Any new access may tend to decrease the recreational value of this stretch because more access typically leads to more use. More use would lower the recreational value of this stretch for the values its current users have come to expect, and at a faster rate than in alternative 3.5.1. Without the restriction in this alternative, new access acquisitions below Greycliff FAS would likely increase recreation value for users that prefer greater access to this stretch of the Madison river and smaller distances between access sites.

4.0 User growth limitations analysis on recreation values.

4.1. Commercial caps

The analysis under this section compares commercial use levels during three successive calendar years, with levels of outfitter trips increasing each year. This scenario allows for comparison with the commercial trip assignment alternatives, which rely on the calendar-based SRP permitting process. Commercial use in 2020 is expected to be impacted by the COVID-19 response efforts, and will probably not be reflective of recent trends. For the 2020 cap, the estimate is based on projected growth (Table 3) and does not reflect the impacts from the coronavirus pandemic.



MONTANA FISH, WILDLIFE & PARKS

Therefore, the 2020 cap alternative will be evaluated at a level of 15,770 outfitter trips, a 14% increase over 2019 levels.

4.1.1. Cap commercial use at 2020 levels analysis on recreation value

Outfitter trips typically refer to one boat for float trips, which average 1.8 clients. This 14% increase over current 2019 levels would mean roughly 1,780 extra boat trips (or slightly fewer since a small number of trips are to guide wade anglers). If the use patterns continue as portrayed in Figures 4 and 5 and in Table 3, then FWP would expect to see many of these additional trips occur during the June-September period in the Lyons Bridge-Varney area of the upper Madison. This is the time and place where commercial users currently comprise a majority of users, and increased pressure would exacerbate the crowding and conflict at access sites and on the river.

4.1.2. Cap commercial use at 2019 levels analysis on recreation value

Current levels of commercial use (13,990 trips) have contributed to unacceptable levels of crowding, predominantly in the Lyons Bridge-Varney area of the upper Madison. Capping commercial use at current levels would neither alleviate the problem nor make it worse.

4.1.3. Cap commercial use at 2018 levels analysis on recreation value

In 2018 there were 12,210 commercial trips, which represents a 14% or 1,780 boat reduction from current levels. 68% of trips are in the Lyons-Varney area, which could cause a reduction of 1,210 boats in this stretch. This cap would be expected to reduce crowding and conflict at both access sites and on the river in this part of the upper Madison River.

4.2. Commercial trip assignment

This analysis will focus on how each method affects the recreational experience of both the angler hiring the services of a commercial outfitter and the non-commercial angler.

4.2.1 Client-driven allocation method

This method would require those seeking to hire a commercial outfitter to plan in advance to reserve a trip in the January-April period through the “general pool,” or compete for the monthly allotment of trips in for the months thereafter. This would put the onus on the client to make the reservation, rather than on the outfitter (as in the unlimited-use allocation and historic use allocation method), and could be a source of a perceived reduced recreation experience, especially if client days were unavailable.

4.2.2. Historic-use allocation method

This method would allocate trips to outfitters, roughly based on current use. One impact and inconvenience to the angler seeking to hire an outfitter may be that if an outfitter has reached their allocation under the tier, then the angler would be forced to seek another outfitter. The tier system, if fully utilized, would have the potential to increase



MONTANA FISH, WILDLIFE & PARKS

commercial activity beyond the cap. If a tier system were adopted at 2019 levels (13,990 trips), it could potentially expand activity by 1,802 trips. This could be objectionable to non-commercial users, particularly if the additional trips were taken in the summer in the already crowded Lyon's Bridge to Varney FAS portion of the river.

4.2.3. Method developed by SRP holders

This approach would have a high level of uncertainty regarding impact to recreation, as it has not yet been developed. However, oversight and approval of any plan that is developed by FWP and the BLM should ensure that impacts and inconvenience to anglers are minimized.

4.2.4. Unlimited-use allocation method

This method would be the most acceptable to anglers seeking to hire an outfitter because outfitters can purchase an unlimited number of additional use days and theoretically accommodate any demand beyond the cap. The impact of the 15% tax on the willingness of the outfitter to book these additional trips is unknown. The impact to the non-commercial angler through additional crowding is uncertain because it is not known how many additional trips may materialize. Therefore, this alternative may have a high likelihood to negatively affect the non-commercial angler.

5.0 Madison river goal alternative analysis on recreation value

This alternative would limit commercial outfitter trips to current (2019) levels, but would not regulate levels of non-commercial recreationists. Overall use on the river is expected to grow, given that commercial use is only 13% of overall use on the Upper Madison River and a much smaller percentage on the lower river. However, because commercial use is heavily concentrated in the Lyons Bridge-Ennis section of the upper river during the June-September period, there are approaches analyzed within this alternative that would be used to reduce crowding and conflict in that section. To reduce river crowding, it would institute a rest rotation system in the Lyons Bridge-Ennis section which would give the non-commercial users less crowded sections two days a week. To accomplish access site conflict, this alternative would implement a redesign of FAS parking lots where capacity and traffic flow are problems, it would staff some of the same areas with employees to assist with parking and boat launching, and it would provide educational materials on etiquette regarding the use of boat ramps.

Non-commercial use would not be regulated or restricted in any way as part of this alternative. However, the conflict between boat and wade anglers would be addressed through a total ban on the use of boats to access fishing three days per week in the walk/wade sections. The issuance of a Madison River Stamp to all users would be intended as an effort to better understand the trends in numbers and types of user of the non-commercial and non-angler recreationist, especially on the lower river where non-anglers predominate. Although this alternative would only use the stamp for information gathering purposes, it could ultimately be used to regulate non-commercial users, either in numbers or seasonal restrictions on types of use.



MONTANA FISH, WILDLIFE & PARKS

The restriction of new acquisitions below Greycliff FAS that disallows development of boat ramps would likely keep that section of river relatively unused, and the growth of user numbers would be considerably slower than elsewhere on the river.

Predicted Effects on the Physical Environment and Natural Resources

Fish, wildlife, vegetation, topography, and the water itself are some of the outstanding natural resource values that define the Madison River corridor and contribute to the exceptional recreation environment.

Grasslands and shrublands are the dominant vegetation communities along the Madison River. The dry grasslands are dominated by Idaho fescue and bunchgrass. Common forbs include yarrow, Indian blanket flower and boreal bedstraw. Shrublands are dominated by a variety of sagebrush species including big mountain sagebrush and silver sagebrush. Willow and cottonwood stands are sporadic along the river while conifers are found predominately in the surrounding uplands and along the river corridor above Quake Lake. Other shrubs may be present but are usually at low cover values (5-10%). Species include rubber and green rabbitbrush, wax currant, woods rose, deerbrush, and snowberry.

The aesthetic character of the Madison River valley and the quality of the recreational experience on the river is defined by the open space, land use, and small communities. The aesthetic value of the river includes steep canyons, towering cliffs, beautiful forests, panoramic mountain views, and the qualities of the river itself. The two major land uses within the Madison watershed are ranching and residential development. Larger communities located near the Madison River include West Yellowstone, Ennis, Three Forks, and Bozeman.

Restrictive management actions have the potential to impact the physical environment and natural resources if they result in changes in user density and/or distribution. However, to not consider management actions could adversely impact the resources currently enjoyed on the Madison River. The carrying capacity for use on the Madison River is difficult to ascertain before resources are affected, but given unchecked growth, the resources that make the Madison River a popular destination may become impacted.

Two dams and a natural lake interrupt the flow of the Madison River outside of the Yellowstone National Park boundary. Hebgen Dam backs up the Madison to within two miles of Yellowstone Park forming Hebgen Reservoir. Quake Lake, a 4.5-mile long natural lake formed by a major earthquake and subsequent landslide in 1959, begins about two miles below Hebgen Dam. Ennis Reservoir is formed above Ennis Dam, which is about five miles north of Ennis, Montana. Although many small tributaries contribute to the Madison's volume, operations at Hebgen Dam primarily dictate flows at any point in the season. The quantity of water released is influenced by the amount of precipitation that occurs in the region, the amount of water diverted from the



MONTANA FISH, WILDLIFE & PARKS

river for irrigation, and the water temperature of the river. Peak runoff typically occurs between late May and early July. Annual mean flow is 1,325 cubic feet per second (cfs) downstream from Quake Lake and 1,930 cfs below Ennis Reservoir. The peak streamflow measured on the upper Madison was 5,030 cfs in 1993 while the lower Madison peaked at 9,550 cfs in 1970. Water temperatures, which are moderated by releases from Hebgen Reservoir, are typically lowest in January at approximately 34 °F. and are highest in July, occasionally exceeding 80 °F near Black's Ford FAS. Except during spring runoff, water quality on the Madison River is typically high with minimal suspended sediment in the river, creating clear water with good visibility.

The Madison River is home to nine native fish species including Arctic grayling, mountain whitefish, westslope cutthroat trout, longnose dace, rocky mountain sculpin, stonecat, longnose sucker, mountain sucker, and white sucker. There are seven known non-native species in the Madison River including common carp, yellow perch, brook trout, rainbow trout, brown trout, Utah chub and northern pike. Although considered a well-functioning aquatic ecosystem, the Madison River has faced challenges including aquatic invasive species, whirling disease, high river use, and drought. The Madison watershed is home to a wide variety of wildlife. According to the Montana Natural Heritage Program database, 70 mammal species, 230 bird species, six amphibian species, and eight reptile species use the drainage for permanent or migratory habitat.

Traditional philosophy in fish and wildlife management has been to institute harvest levels that replace or off-set natural mortality (compensatory mortality), and to avoid situations where harvest adds to natural mortality (additive mortality). Over the past 30 years, the propensity of anglers to harvest trout in western river fisheries has declined, as an ethic of catch-and-release fishing has taken hold. There is a belief among some anglers that catch-and-release fishing does not harm trout. Contemporary research has shown that under controlled situations and using artificial lures mortality from a single hooking event is typically low. Mortality rates for fish caught in water exceeding 73 °F experienced three-day delayed mortality rates of 3%, 10%, and 20% for brown trout, rainbow trout, and mountain whitefish, respectively, for one hooking event in Montana rivers (Boyd et al. 2011).

Other studies have tried to quantify hooking mortality over multiple hooking events. During the 2017 creel survey conducted on the Madison River, FWP estimated that every rainbow trout was caught on average 4.5 times. Multiple hooking events during a short period of time likely will result in greater impacts for each hooking event due to cumulative stress when compared with the same number of hooking events over a longer period of time. For an individual fish, the cumulative chance of mortality due to a hooking event likely increases with age, potentially having an effect on the population age structure through time at high pressure levels.

Population monitoring on the Madison River during the fall of 2019 has shown that the number of larger rainbow and brown trout in the Pine Butte section (~4 miles upstream of Lyon's bridge) have declined to near 20-year low. The only years in the 2000s that were lower were during drought years (2003 and 2004). Trout sampling results in the Varney Section (~20 miles



MONTANA FISH, WILDLIFE & PARKS

downstream) did not show the same result. Although a conclusive cause cannot be determined at this time, it is possible that cumulative hooking mortality has resulted in the observed decline in rainbow and brown trout in the Pine Butte section. FWP will be collecting otoliths from trout in the Madison and other SW Montana rivers to obtain accurate age information, which will help determine mortality rates. Comparisons of mortality rates among sections and rivers will help FWP to better understand what factors are affecting sections with high mortality rates.

1.0 Non-regulatory Alternative Analysis on Physical Environment and Natural Resources

The effects on the physical and natural resources are dependent on how use changes. If fewer walk/wade anglers use the two sections, then a reduction in heavy-use trails would be expected.

Impacts to game fish populations through catch-and-release mortality (directly or indirectly by serving as an additional stressor to disease, warm water temperatures, or reduced flows) will be greatest under this alternative, as there will be no restrictions on angler numbers. Changes to fishing regulations have the ability to counteract these negative impacts to some degree, but only if entire sections are closed to fishing year-round or seasonally. In such an occurrence, there would be new and unpredictable patterns of crowding and conflict that arise as anglers shift use to adjust to closures.

The elimination of the Special Recreation Permit (SRP) program would not directly impact the natural environment; however, insufficient funds available for routine site maintenance impacts from unchecked user growth could result in an increase in site damage.

2.0 Status Quo Alternative Analysis on Physical Environment and Natural Resources

The physical and natural resources would degrade given the unrestricted growth of river recreation and commercial use. The riparian area would suffer increased pioneered trails, pioneered boat ramps and sanitation problems as people continue to find their own ways to decrease crowding conflicts. The physical and natural resources within FAS's would decline with increasing use if river users create their own parking areas in riparian vegetation or along riverbanks.

Impacts to the fishery would be similar to the non-regulatory alternative because overall growth of angler pressure would not be restricted or regulated. The preservation of the walk/wade sections would offer a minor degree of protection for the fishery because the ban on fishing from boats would be maintained and this segment of angler pressure would not be allowed to increase.

3.0 Social conflict management Analysis on Physical Environment and Natural Resources

Actions designed to address social conflict have the potential to impact the physical environment and the natural resources if they result in changes in user density and/or distribution. To not consider management actions could adversely impact the resources currently enjoyed on the Madison River. It is difficult to ascertain the carrying capacity for use



MONTANA FISH, WILDLIFE & PARKS

on the Madison before resources are affected, but given unchecked growth, the resources that make the Madison River a popular destination may decline.

Alternative 3.1.1. Seasonal Walk/Wade restrictions

Removing boats for 2 days per week would not likely have any observable effect on the physical or natural environment, but it may reduce traffic slightly at boat ramps and parking areas at the time of the restriction. It is anticipated that there may be an increase in wade/walk only anglers for these two days per week, which could have some minor effects to the physical and natural values through increased traffic on trails and shorelines.

This alternative may provide some protection for the fishery as removing boats for fishing two days per week would potentially mean less angling pressure in these sections. However, if there is no cap imposed on commercial outfitters in the near term and non-commercial users in the long-term then the overall use of these sections will likely increase, along with impacts to the fishery.

Alternative 3.1.2 Seasonal Walk/Wade with time of day restrictions

Removing boats for 12 hours per week would not likely have any effect on the physical or natural environment, but it may reduce traffic slightly at boat ramps and parking areas at the time of the restriction. It is not anticipated that there would be an increase in walk/wade only anglers during the 12 hours per week. This alternative would provide less protection of the fishery than in alternative 3.1.1 because the time of day restrictions may not reduce overall angling pressure.

Alternative 3.2.1 Seasonal Rest-Rotation 2 sections: Quake Lake to Lyons Bridge, and Burnt Tree FAS to Ennis FAS

This alternative would likely have little impact on the fishery or other physical and natural resources, since it would likely not result in much change from the current use patterns.

Alternative 3.2.2 Seasonal Rest-Rotation 2 sections: Varney Bridge FAS to Ennis FAS, and Lyons Bridge FAS to Palisades FAS

This alternative would not likely have much of an effect on the physical or natural resources. However, there is a possibility that this alternative would result in a lower use level during the rest-rotation days in these sections, which may provide a break to the fish populations from angling pressure and stress from catch-and-release angling.

Alternative 3.2.3 Year-round Rest-rotation 6 sections: Quake Lake to Lyons Bridge, Lyons Bridge to Palisades FAS, Palisades FAS to McAtee FAS, McAtee to Varney, Varney to Ennis, and Ennis Bridge to Ennis Reservoir

Impacts to the fishery and the FAS's in the unrestricted stretches may result in the natural resource conditions at lower-use sites degrading if the rest rotation results in more frequent use of these sites. Current high-use sites would likely experience minimal change



MONTANA FISH, WILDLIFE & PARKS

to natural resources and the physical environment. Conversely, resting stretches may improve the health of the fishery by providing a respite for the fish.

Rest rotation spread over 6 days of the week may increase the health of the fishery by decreasing angling pressure on scheduled rest days. If angling pressure does increase to unacceptable levels in the future on the rested stretches of river, the management plan in place could be changed to reflect any changes in use patterns. The rest rotation proposal may also act to increase angling pressure in the stretches and sites that are unrestricted each day.

Alternative 3.3.1 FAS Rangers

No known impacts from this alternative on the physical environment or natural resources exist.

Alternative 3.3.2 Access Site Education and angler etiquette

The use of signs to indicate proper conduct within the site when launching a boat would impact the physical and natural environment minimally with the addition of a sign and wood post. Instructions on how to retrieve and handle caught fish in the educational materials may reduce stress to individual fish.

Alternative 3.3.3 Facility improvements

Impacts under this alternative would be dependent upon the scope of work involved, possibly affecting physical resources in a positive manner and/or affecting natural resources negatively. Damage to stream banks from overuse by foot traffic could be improved through restoration efforts or better site control measures to discourage use of areas sensitive to erosion. Damage to ground outside of established parking areas by overflow vehicles could be reduced in some instances by better design of parking spaces. In other situations, building larger parking areas will result in more loss of natural vegetation and habitat. The physical environment would be affected, but it is unknown at this time if effects would be negative or positive.

Alternative 3.4 Social conflict management: Restrict commercial fishing below Greycliff

Designation of the 15-mile section of the lower Madison River between Greycliff FAS and Milwaukee FAS as non-commercial would not likely benefit natural resources or the physical environment on this stretch of river because in 2018 there were only 108 commercial trips that took out in this stretch of river. The fishery here is limited and the longer distance between access sites makes this stretch undesirable to most commercial users, and thus rarer used. This stretch of river is unique and renowned for its scenic beauty, wildlife, and the solitude it affords floaters.



MONTANA FISH, WILDLIFE & PARKS

Alternative 3.5 Social conflict management: Primitive designation below Greycliff

Below Greycliff FAS river use is lower than anywhere else on the river, in part because of limited access and limited fishing. Floaters in this stretch of the river value a primitive floating experience with unique scenery and plentiful wildlife. This proposed alternative would help to conserve the physical and natural resources unique to this stretch by restricting development of new access sites. However, most of the land bordering the river is private, and land management activities by those landowners could impact these resources in ways outside of FWP's control.

Alternative 3.5.1 No new access acquisitions in the primitive section between Greycliff FAS and Milwaukee FAS. Analysis of impacts on physical and natural resources

Because there would be no new acquisitions, there would be no new direct impacts that would arise from this alternative. Indirectly, this alternative may also serve to slow the growth of use, and hence impacts to natural resources, in this stretch as it could be prohibitive to some recreators because of its 15-mile length.

Alternative 3.5.2 New access acquisitions would have limited development to maintain the primitive nature by limiting vessel or float tube access to carry-in only

If new access acquisitions were considered, the natural and physical resources at any new access site would be heavily impacted. In addition, a new access site would create more opportunity to access and float this stretch of river likely causing increased natural resource degradation of this riparian area and the currently existing sites.

4.0 User growth limitations analysis on natural and physical environment

Alternative 4.1.1. Commercial cap at 2020 levels

Any increase in use on the river could lead to an increase in fish catch rates and a corresponding increase in catch-and-release mortality, pushing the fishery closer to unsustainable mortality levels. While the impact from uncontrolled growth of non-commercial users would have an even greater impact on fish populations, the tendency for commercial outfitters to favor certain areas may mean that impacts are seen locally, such as the Lyons to Palisades section. Increased use would also have the potential for more bank erosion, bank trampling, and human waste.

Alternative 4.1.2. Commercial cap at 2019 level

Impacts from the commercial sector would remain the same as in 2019, and could potentially diminish over time relative to non-commercial use if that sector is not controlled. No change in impacts to bank trampling, erosion, water quality, or human waste would be expected.

Alternative 4.1.3. Commercial cap at 2018 levels

Impacts to the fishery would diminish slightly at first, but would then be negated by increasing non-commercial angling use over time, which has been increasing at a level of



MONTANA FISH, WILDLIFE & PARKS

16% annually between 2013 and 2017. Slight decreases in bank erosion, trampling, water quality or human waste would be expected initially, until increases in non-commercial use make up the difference from the decrease in commercial use.

Alternative 4.2.1. Client-driven allocation method

Impacts would be the same as above for capping commercial use at levels described in 2018, 2019 or 2020. This is because this method would ensure the cap is not exceeded.

Alternative 4.2.2. Historic-use allocation method

Because of the flex day system that would take a few years to calibrate and bring in alignment with the cap, there would be a brief increase in physical habitat degradation and catch-and-release mortality from the resulting surge of anglers. The tier system also makes it likely that the cap would be exceeded on a consistent and permanent basis, (1,802 tier system days over a cap of 13,990 using a 2019 cap level) meaning that these habitat and fisheries impacts would always be slightly higher than in alternative 4.2.1 under the same cap.

Alternative 4.2.3. SRP holder allocation method

Effects are unknown, but any method that does more than temporarily increase levels over the cap would not be acceptable, so impacts would not be expected exceed those under alternative 4.2.2.

Alternative 4.2.4. Unlimited-use allocation method

Impacts to physical resources would potentially be high, as there is no identified limit to commercial use, and this trend would only be abated by an unknown level of reluctance by outfitters to pay a 15% tax. Impacts to the fishery would likely be modest, although there is a high level of uncertainty regarding the amount of additional days that outfitters may purchase.

5.0 Madison river goal alternative analysis on physical environment and natural resources

Impacts from the commercial sector would remain the same as in 2019, and could potentially diminish over time relative to non-commercial use if that sector is not controlled. No change in impacts to bank trampling, erosion, water quality, or human waste would be expected. Because non-commercial angling would not be controlled under this alternative, the impacts from that sector due to physical habitat damage and impact to the fishery would be expected to continue. Social conflict management (rest-rotation two days a week) would potentially decrease impacts to the fishery in the heavily used Lyons Bridge-Palisades area. Impacts on bank trampling and erosion resulting from the walk/wade restrictions may be substantial as more wade anglers are drawn to these sections. The restriction forbidding the building of boat ramps on new acquisitions downstream of Greycliff would limit but not stop the slow deterioration of physical habitat and catch-and-release mortality to trout.



MONTANA FISH, WILDLIFE & PARKS

Predicted Effects on Heritage Resources

Heritage resources are those resources, both human and natural, created by activities of the past that remain to affect and inform present and future societies. Minimal effects on heritage resources are expected from potential management actions. FWP would conduct all required heritage surveys prior to ground-breaking activities and obtain clearance from the State Historic Preservation Office (SHPO) acting under authority of the National Historic Preservation Act (1966) to identify historic and archaeological sites that may be affected by actions contemplated in this EA.

1.0 Non-regulatory alternative analysis of impacts on heritage resources

The existing fishing regulations in the walk/wade sections that prohibit fishing from a boat may have served to attract more wade anglers than might have otherwise used the sections. Whether this has actually occurred is not certain, but the removal of this regulation and the prohibition against new regulations could lead to a diminishment of heritage resources over time.

2.0 Status quo alternative analysis of impacts on heritage resources

Unchecked river recreation use on the Madison may cause heritage resources to be degraded at a similar rate to alternative 1.0 if more riparian areas are compromised with pioneered trails and pioneered boat ramps.

3.0 Social conflict alternative analysis of impacts on heritage resources

The heritage resources on the Madison River are vast. Changing the pattern of recreational use on the river is expected to change how heritage resources are impacted. Proposals that decrease use in undeveloped riparian areas are likely to minimize degradation of heritage resources in these locations. Conversely, proposals that increase use in any undeveloped areas would likely increase impacts to heritage resources. Shifting use on the Madison River into various FAS's or other already developed areas would likely have no effect on heritage resources.

4.0 User growth limitations alternative analysis of impacts on heritage resources

Impacts to heritage resources would be directly related to the increase in numbers of people associated with the alternative. Therefore, commercial caps at 2020 levels will have slightly more impact than 2019 or 2018 levels. These impacts will ultimately be minor when compared to impacts occurring from uncontrolled growth of the non-commercial sector. As the non-commercial sector grows, and new facilities are provided to accommodate their needs, the National Historic Preservation Act will be triggered and heritage resources in need of protection will be identified at that time.

5.0 Madison River Recreation Goal alternative effect on heritage resources

Impacts on heritage resources from commercial outfitters would be limited to existing levels, with a cap put on at the 2019 level. The exact methodology chosen would make little difference in this regard. Uncontrolled non-commercial use would mean that degradation of heritage resources would continue, although this may be ameliorated somewhat if the rest-rotation



MONTANA FISH, WILDLIFE & PARKS

sections leads to fewer people in the Lyons Bridge to Ennis section. Walk/wade restrictions under this alternative would not control growth of wade anglers, so heritage resources on the banks of the river would probably show more impact, except in the primitive area downstream of Greycliff where growth will be much less than elsewhere.

Predicted Effects on Economic Resource Values

Rivers and their resultant recreation are important to Montana's tourism and travel industry, ranking 3rd in the top 10 attractions for vacationers to Montana with fishing ranked 9th (Economic Review of the Travel Industry, 2018 Table 7). River recreation contributes to the local, regional and state economies through recreation, tourism, and other travel expenditures including purchases of equipment, food, lodging and other amenities; job creation; and generation of tax revenue. Based on 2017 angler use data on the Madison River, about \$152 million are spent annually (in 2020 dollars) on fishing trip related expenses. Guided and outfitted activities are intimately entwined with the quantity and quality of natural amenities available. This connection deepens the importance of continued accessibility and preservation of quality public lands and waterways. Actions or events that lead to a real or perceived degradation of the natural resource quality of the rivers or riparian areas pose inherent threats to foundational components of Montana's tourism industry.

The angling trip related expenditure estimates provided in this environmental assessment were provided from FWP 2014 baseline expenditure surveys for river/stream fishing in Montana applied to the Madison River. The 2014 estimates were updated using adjustments provided by the Bureau of Labor Statistics to convert 2014 dollars to May 2020 dollars (to account for inflation). Residents spend on average \$90.93 dollars per day on angling trip related expenditures while fishing on rivers/streams in Montana; nonresidents spend on average 704.59 dollars per day on angling trip related expenditures while fishing on rivers/streams in Montana (in May 2020 dollars). Angling trip related expenditures include the following: (1) transportation (e.g., gas, car rental, airfare, and any other transportation costs); (2) food, beverages, and lodging; and, (3) equipment purchased just for the trip, access and/or guide fees, and all other expenses—NOT including the cost of licenses and any durable goods (e.g., fishing rod/reel, waders, boat, truck, etc.).

Table 7: Non-resident visitation and related expenses

Nonresident Visitation for Years: 2018 - 2020		
Years	Visits	Percent Change
2018	12,370,000	n/a
2019	12,636,000	2%
2020	13,770,000 (Est)	9%



MONTANA FISH, WILDLIFE & PARKS

2018 Nonresident Expenditures for Southwest Montana Region			
Categories	Expenditures	% of Region	% of State
Auto Rental, Repair	\$9,709,000	2.1%	0.3%
Campground	\$3,761,000	0.8%	0.1%
Farmers Market	\$353,000	0.1%	0.0%
Gambling	\$1,123,000	0.2%	0.0%
Gas, Diesel	\$126,868,000	27.4%	3.5%
Grocery, Snacks	\$28,515,000	6.2%	0.8%
Hotel, Motel, B&B	\$53,515,000	11.6%	1.5%
License, Fees	\$36,269,000	7.8%	1%
Made in Montana	\$13,338,000	2.9%	0.4%
Outfitter, Guide	\$75,875,000	16.4%	2.1%
Rental Cabin	\$7,578,000	1.6%	0.2%
Restaurant, Bar	\$80,823,000	17.5%	2.3%
Retail	\$23,667,000	5.1%	0.7%
Service	\$1,859,000	0.4%	0.1%
Transportation Fares	\$37,000	0.0%	0.0%
Total	\$463,290,000	100%	12.9%

*Data Source: Institute for Tourism and Recreation Research

These spending categories are rounded numbers and may differ slightly from other reports.

1.0 Non-regulatory Alternative

Under this alternative, the existing restriction on fishing from a boat in the walk/wade sections would be removed, likely decreasing satisfaction of wade anglers and potentially displacing them to other sections of the Madison River or other rivers altogether. The 2016 mail survey of angler attitudes found that 18% of anglers using the upper wade section found the number of people using boats to access the river to bank/wade fish very unacceptable. For this alternative, these same anglers would presumably quit using this section of river, and go to other rivers where boats are less prevalent or not used. Using unpublished data from the 2017 angler mail survey, 25% of the angler pressure (51,828 angler-days) between Quake Lake and Ennis Dam occurred in the upper walk/wade section. Therefore, an estimated decline of 9,070 angler-days would be expected under this alternative. It is assumed these would be almost all non-guided anglers (guided anglers would be likely to go elsewhere on the Madison), and they would quit the river in proportion to their residency status (85% non-resident, 15% resident). This would result in the loss of \$132,394 resident angling expenditures per year; and, \$5.81 million dollars in nonresident angling expenditures per year. No information exists on the opinions of wade anglers on the lower walk/wade section regarding boats, but FWP assumes wade anglers would



MONTANA FISH, WILDLIFE & PARKS

quit the river in the same proportion under this alternative. Using traffic counter data in 2018, there was 31% as much use in the lower walk/wade section as in the upper. If this traffic count is equivalent to the differences in anglers between the two sections and wade anglers quit the river in the same percentage as in the upper, 2,892 fewer angler-days would occur under this alternative. This would result in the loss of \$78,836 resident angling expenditures per year; and, \$1.43 million dollars in nonresident angling expenditures per year. The extent to which more boats from other rivers will be drawn to these sections is difficult to predict but is assumed to be zero for this alternative because unrestricted boat use is already permitted on the 38-mile section of river between the two walk/wade sections. As a result, anyone wanting to float the Madison River is probably already doing so.

2.0 Status Quo Alternative

FWP does not predict any short-term effects on the economy if this alternative is chosen. This alternative would not limit any type of recreational use on the Madison River; growth (and associated economic benefits) would be influenced by public demand for commercial services and other influences on consumer spending. Over a longer period of time, there would be potential for unchecked increases in use to have a negative effect on the local tourism economy if undesirable recreational conditions or resource damage result in fewer people choosing to recreate on the Madison River. Unchecked growth in angling could also lead to a prolonged decline in the fishery, which could subsequently discourage angler use and result in significant economic impacts

3.0 Social conflict management

Alternative 3.1.1. Seasonal walk/wade restrictions

The 2020 scoping survey revealed that 50% of respondents indicated they fished less in the past five years on the Madison River than they had previously due to crowding, and this amounted to an average of 2.5 fewer angler days (11% less). If these boating restrictions were put in place, at least some of these anglers would be expected to return, potentially resulting in an increase of 2,960 angler days. This would result in the increase of \$40,372 resident angling expenditures per year; and, \$1.77 million dollars in nonresident angling expenditures per year. The number of wade anglers in the lower walk/wade section expected to return is 918 angler days. This would result in the increase of \$25,006 resident angling expenditures per year; and, \$453,051 dollars in nonresident angling expenditures per year.

Alternative 3.1.2. Seasonal walk wade restrictions with time of day restrictions

The same number of anglers would potentially return to fish this section of river as described above in 3.1.1.



MONTANA FISH, WILDLIFE & PARKS

Alternative 3.2.1 Seasonal Rest-Rotation 2 sections: Quake Lake to Lyons Bridge, and Burnt Tree FAS to Ennis FAS

The 2020 scoping survey revealed that 50% of respondents indicated they fished less in the past five years than they had previous because of crowding, and this amounted to an average of 2.5 fewer angler days (11% less). In the upper section, if these rest-rotation restrictions were put in place these anglers would be expected to return, resulting in an increase of 2,960 angler days. This would result in the increase of \$40,373 resident angling expenditures per year; and, \$1.77 million dollars in nonresident angling expenditures per year. The confidence in predicting the number of returning anglers to the lower walk/wade section is low because there are no angler-use data for solely this section. However, traffic counter data for sites in the proposed lower walk/wade section in 2018 were equivalent to the upper section, and assuming this proportionately corresponds to differences in angler numbers between the two areas, we predict 2,960 angler-days to return to this section if the rest rotation were enacted. The percentage of residents is assumed to be 24% in this lower section (2017 angler pressure data). This would result in the increase of \$65,106 resident angling expenditures per year; and, \$1.58 million dollars in nonresident angling expenditures per year.

Alternative 3.2.2 Seasonal Rest-Rotation 2 sections: Varney Bridge FAS to Ennis FAS, and Lyons Bridge FAS to Palisades FAS

The 2020 scoping survey revealed that 50% of respondents indicated they fished less in the past five years than they had previously due to crowding, and this amounted to an average of 2.5 fewer angler days (11% less). For this section of river where rest-rotation would be implemented, there were an estimated 138,695 angler days in 2017, so it is therefore assumed that these anglers may come back to take advantage of this rested section, yielding an increase of 7,628 angler days. This would result in the increase of \$208,048 resident angling expenditures per year; and, \$3.76 million dollars in nonresident angling expenditures per year.

Alternative 3.2.3 Year-round Rest-rotation 6 sections: Quake Lake to Lyons Bridge, Lyons Bridge to Palisades FAS, Palisades FAS to McAtee FAS, McAtee to Varney, Varney to Ennis, and Ennis Bridge to Ennis Reservoir

Estimates of anglers returning to the river are calculated as a summation of alternatives 3.2.1 and 3.2.2. In the upper and lower walk/wade sections there would be an estimated 5,920 anglers returning. In the section from Lyons Bridge FAS to Ennis FAS, the increase would be 7,628 additional anglers, for a total of 13,548 angler days. This would result in the increase of \$273,154 resident angling expenditures per year; and, \$5.34 million dollars in nonresident angling expenditures per year.



MONTANA FISH, WILDLIFE & PARKS

4.0 User growth limitations

Alternative 4.1.1. Commercial use cap at 2020 levels

This cap is predicted to be 16,088 trips, and at an estimated rate of 1.8 clients/trip would total 29,603 client days. This would result in a 15% increase in client trips, the same increase as seen between 2018 and 2019. The estimated increase is 3,480 client angler days, of which 10 percent are resident and 90 percent are nonresident angler days. This would result in the increase of \$31,644 resident angling expenditures per year; and, \$2.21 million dollars in nonresident angling expenditures per year.

Alternative 4.1.2. Commercial use cap at 2019 levels

This alternative would maintain current economic impact from guided trips. In 2019 there were 13,990 trips and an estimated 25,742 client days declared by outfitters for an average of 1.8 clients/trip.

Alternative 4.1.3. Cap at 2018 levels

In 2018 there were reported 12,210 commercial trips and 22,422 client days for an average of 1.8 clients/trip. This would result in a 15% decrease in guided clients (90% non-resident) compared to 2019, equating to an estimated decrease in 3,320 client angler days. This alternative would result in the increase of \$30,189 resident angling expenditures per year; and, \$2.11 million dollars in nonresident angling expenditures per year.

Alternative 4.2.1. Client-driven allocation method

This alternative would be expected to result in the same economic impact as the cap level chosen, since it is expected that all trips will be claimed and utilized.

Alternative 4.2.2. Historic-use allocation method

This alternative would have a somewhat higher economic impact than caps, because of flex days leading to an 86-108% increase over the three cap-year options. With an estimated 200 outfitters operating and allowed 10 flex days in 2 out of every three years, it is equivalent to $6.7 \text{ flex days/year} \times 200 = 13,400$ maximum possible trips or 24,120 clients. As flex days are adjusted to maintain levels below the cap over a 3-year period, the economic activity would fall to that of the cap. For year two, the estimated increase would be 16,160 client angler days, and in year 3 there would be an estimated increase of 8,080 client angler days. Totaled over this 3-year period, this would result in the increase of \$439,737 resident angling expenditures per year; and, \$30.66 million dollars in nonresident angling expenditures per year. The tier system also would have the potential to increase the commercial activity by 13% on a permanent basis, equating to 1,802 trips or 3,316 clients (90% non-resident) under the 2019 cap. This would result in the increase of \$30,189 resident angling expenditures per year; and, \$2.1 million dollars in nonresident angling expenditures per year.



MONTANA FISH, WILDLIFE & PARKS

Alternative 4.2.3. SRP driven allocation method

Economic impact is unknown at this time, but an impact analysis would be conducted when a proposed method is established.

Alternative 4.2.4. Unlimited-use allocation method

Because flex days under this alternative would be unlimited, economic activity could be affected but is difficult to predict and quantify. The 15% tax on these flex days may provide disincentive for outfitters to use this option, and if they externalize this cost to their clients, then it would likely be a disincentive for some who are unwilling to pay for more expensive trips. In either case, the tax would be likely to slow the growth of commercial trips in future years relative to that which would occur without a commercial cap.

5.0 Madison river goal alternative

This alternative would cap commercial activity at current (2019) levels. The only changes to non-commercial activity would come from the increases in anglers returning to fish the Madison river in the walk/wade and rest-rotation sections. These numbers are estimated to be 3,878 angler days for the walk/wade sections (average of 19% resident for both areas combined). This would result in the increase of \$66,924 resident angling expenditures per year; and, \$2.21 million dollars in nonresident angling expenditures per year. The increase in number of anglers in the rested sections would be 5,920 angler-days (19.6%% residents for both areas combined). This would result in the increase of \$97,022 resident angling expenditures per year; and, \$3.35 million dollars in nonresident angling expenditures per year. The economic impact of limiting access site development downstream of Greycliff FAS is unknown but expected to be minimal. Increased use may occur, especially if the designation of “primitive” were to serve to attract anglers and floaters who are drawn to this type of experience. However, growth here would likely be relatively low compared to the expected increase in use elsewhere on the lower Madison River. An estimated 23,069 individuals used the Milwaukee and Fairweather FASs in 2018 (where many people would take out on a float through this primitive section) based on traffic counter data, and these activities only accounted for 7% of all use on the lower river. Therefore, the economic effects from low use in the primitive reach would be minimal compared to the uncontrolled growth that would be allowed in the rest of the river and unaccounted for in this EA. Any changes in economic activity on this lower section may disproportionately affect the town of Three Forks due to its close proximity, and the primitive nature of this section may also draw more people from outside the local area than the rest of the lower Madison.

The anticipated ability of each of the alternatives to achieve the management goals is summarized in Table 8. Most alternatives only impact one or two of the goals, e.g. the social conflict alternatives exclusively deal with diversifying opportunity and reducing conflict, while the commercial caps and allocation approaches impact the sustainability of fisheries and economic interests. In contrast, the Madison River Goal alternative is able to at least partly achieve all three goals.



MONTANA FISH, WILDLIFE & PARKS

Table 8. Effect of alternatives on ability to achieve Management Goal

	Long-term health and sustainability of fisheries	Diversifies angling opportunity	Sustains economic benefits to users
1.0. Non-regulatory alternative	--	-	0
2.0. Status quo alternative	--	0	0
3.0. Social conflict management			
Seasonal Walk/wade sections	0	++	0
Seasonal walk/wade w/time of day restrictions	0	+	0
Seasonal Rest/rotation sections (Quake-Lyons and Burnt Tree-Ennis)	0	0	0
Seasonal Rest/rotation sections (Varney-Ennis and Lyons-Palisades)	0	++	0
Year-round rest/rotation (6 sections/6 days)	0	-	0
Access site management (FAS rangers)	0	+	0
Access site management (Access site education)	0	+	0
Access site management (Facility improvement)	0	++	0
4.0. User growth limitations			
Commercial cap at 2020 levels	-	0	++
Commercial cap at 2019 levels	0	0	+
Commercial cap at 2018 levels	+	0	0
Client-driven allocation	+	0	+
Historic-use allocation	-	-	+
Allocation plan identified by SRP holders	N/A	N/A	N/A
Unlimited use allocation	--	-	++
No-cost no-limit Madison River stamp	0	0	0
Evaluation of lower river conflict	N/A	N/A	N/A
5.0. Madison River Goal alternative	+	+	+

KEY

Major negative effect on achieving management goal	--
Minor negative effect	-
Neutral effect	0
Minor positive effect	+
Major positive effect on achieving management goal	++
Objective has no influence on management goal	N/A



MONTANA FISH, WILDLIFE & PARKS

Cumulative Impacts and Potential Risks or Hazardous Adverse Effects

The primary cumulative impact of the proposed alternative would be an aggregate result of increasing recreational use levels, declining fish populations, and a feedback loop that could depress local economies. As described previously, sub-lethal stressors to the fishery are difficult to quantify until it is too late. If non-outfitted angling, outfitted angling, or other non-angling use of the Madison River continues to increase, cumulative effects could cause adverse impacts to the fishery resource, particularly in a time when temperature, disease vectors, and water-level induced stressors are occurring more frequently. In turn, adverse impacts to the fishery resulting in reduced catch rates or average size of fish may impact upper river angler numbers (including commercial), which would have economic impacts to local communities, especially hotels, restaurants, gas stations, and gift shops. The preferred alternative is best designed to prevent these occurrences, but the fact that non-commercial use is not proposed for immediate regulation means that the risk of this cascade of events could still persist.

The Montana Environmental Policy Act (MCA 75-1-208 (11)) requires evaluation of cumulative impacts from related future actions. The Highway 84-East of Norris Corridor Study currently being conducted by the Montana Department of Transportation will recommend highway redesign, which if implemented, stands to be affected by Madison River Recreation management actions. The Corridor study is being undertaken to investigate how to reduce vehicle accidents between Red Mountain Campground and Warm Springs Day Use Area by redesigning or rerouting the highway. This section of road has higher than average numbers of crashes for Montana highways. Potential solutions will be identified by the end of 2021 and construction could begin no earlier than 2026. Alternatives from this recreation plan are not likely to have an observable impact on the Corridor study, as the only use restrictions being considered are to commercial uses, the majority of which are on the upper Madison River and not in this corridor. The preferred alternative of the recreation plan would begin an evaluation of crowding and conflict in the lower river. If it were to lead to eventual restrictions on recreational use, it could slow the growth of vehicle traffic in this Corridor, and extend the length of time the highway engineering changes will be effective. If recreational growth is not curtailed in any way by this plan, it would not serve to extend the effectiveness of any highway redesign.



MONTANA FISH, WILDLIFE & PARKS

Appendix A

Land Ownership

Lands along the Madison River are owned by a variety of public and private entities (Table 1). Although FWP is the lead agency in the development of this recreation management plan, cooperation and coordination with other agencies and private landowners is imperative because of the diverse land ownership adjacent to the river and varying authority and management responsibilities of the land.

Table 1. Madison River Riverfront Land Ownership.

Owner	% Ownership
Private	42%
Bureau of Land Management	24%
US Forest Service	21%
Montana Fish Wildlife & Parks	7%
National Park Service	3%
State of Montana (DNRC)	2%
Montana State University	1%

Private

Although the majority of land along the Madison River is publicly owned, private property comprises 42% of river frontage. Private property boundaries extend to the ordinary low-water mark, but aquatic-based recreation is permitted by the Montana Stream Access Law (Montana Code Annotated §§23-2-301 – 23-2-322) and most of the River can be accessed by public land.

Bureau of Land Management

The BLM owns the largest percentage of public land along the Madison River and has jurisdiction over 28 public access sites. BLM manages the wilderness within the Bear Trap Wilderness Area on the lower Madison River in accordance with the BLM's Bear Trap Management Plan. FWP administers a Special Recreation Permit system on BLM access sites through a memorandum of understanding with the exception of Trail Creek and Falls Creek Recreation Areas. The Trail Creek and Falls Creek Recreation sites are exclusively managed by BLM and they are the only access on the lower Madison River prior to the Bear Trap Wilderness Area.

United States Forest Service (USFS)

The USFS owns a large percentage of Madison River frontage upstream of Quake Lake but has no land downstream of Lyons Bridge Fishing Access Site (FAS). The USFS administers its lands in accordance with the Custer-Gallatin and the Beaverhead-Deerlodge National Forest Plans, which emphasizes management of lands for multiple uses of resources.



MONTANA FISH, WILDLIFE & PARKS

Montana Fish, Wildlife & Parks

FWP owns 16 parcels of land adjacent to the Madison River, 15 of which are FASs that provide public access to the river. The remaining site is the Wall Creek Wildlife Management Area, which is managed to provide multiple recreational opportunities and as secure winter range for elk and other wildlife. FWP also manages Lyons Bridge FAS under a cooperative agreement with the USFS.

National Park Service (NPS)

The Madison River runs within Yellowstone National Park boundaries in Montana for about 4.5 miles. The NPS preserves natural and cultural resources and values for the enjoyment, education and inspiration of this and future generations in accordance with the Yellowstone National Park Strategic Plan.

Montana Department of Natural Resources & Conservation (DNRC)

The DNRC owns a small percentage of the land adjacent to the Madison River, managed to provide income for the State Education Trust. In addition, the Madison River is listed as navigable water, and the streambed is owned by the State of Montana; therefore, the streambed below the ordinary low-water mark is also managed by DNRC, pursuant to Montana Code Annotated §77-1-102.

Montana State University – Red Bluff Research Ranch

Red Bluff Ranch is located near Norris, MT along the west side of the Madison River. The operation comprises 13,750 acres of land, 10,000 of which are deeded and 3,750 leased. Most of this land is rangeland, interspersed with limited hay meadows along the valley bottoms. About 170 cattle and 900 sheep are maintained year-round at the ranch. These livestock, along with the range areas, are used for both education and research.

County Government

The Madison River flows through Gallatin County and Madison County. Under state law (Montana Code Annotated Title 76, Chapter 3), these counties are responsible for reviewing the planning, road maintenance, and zoning for subdivisions as well as other use and development restrictions within their respective jurisdictions. In addition, each county has a conservation district that establishes rules for and administers the Montana Natural Streambed and Land Preservation Act, more commonly referred to as the 310-permitting process. FWP acts in a technical advisory capacity to the conservation districts. A 310 permit is required by any private individual or non-governmental entity proposing any activity that physically alters or modifies the bed or banks of a stream.